DWR

WINTER 2015|2016

a magazine from the California Department of Water Resources

Flow Restored

San Clemente Dam is No More

Celebrating 60 years of Communication

This year marks the Department of Water Resources' 60th anniversary! Created by legislation and signed into law by Governor Goodwin Knight on April 25, 1956, DWR was organized with a Division of Resources Planning, Division of Design and Construction, Division of Administration and a Southern California District. Mr. Harvey O. Banks was appointed on July 5, 1956 as the first DWR Director and served until December 31, 1960. Sixty years later, DWR is now a multi-mission agency with more than 25 Divisions, Field Divisions and Offices throughout the State.

Over the years, DWR has changed not only in size and purpose, but in our tools and processes. I have worked for DWR for nearly 25 years and occasionally reminisce with colleagues and wonder how DWR's operations were managed using key data punch cards, typewriters, carbon paper, hand-written phone messages and four-phase systems. I remember getting my first DWR e-mail account in the 1990's and many years later, was assigned a cell phone, then a smart phone and eventually a tablet that also serves as a laptop. Through these new tools, we have access to real-time information and can relay messages to colleagues and receive timely replies as they attend meetings many miles away from their offices. We are in touch with the world no matter where we are working.

While our computers, smart phones and tablets keep us connected, in some cases, they can hinder communication, too. How many hours have we spent deciphering lengthy e-mail exchanges when a meeting or conference call could have been more productive? What about the confusion or misinterpretation that occurs when messages contain typos or poor grammar? And, we all know that the tone of an e-mail message is often perceived differently between the sender and recipient, which can cause animosity. Communication continues to be an essential function of our jobs. That is why the majority of our duty statements include language to the effect of "must be able to communicate effectively, both orally and in writing." The key word is "effectively." Let's not forget the value of a face-to-face meeting or phone call as a way to exchange important information and ideas with each other.

The next 60 years will bring new technology and new processes, but it will be up to each of us to decide how to best convey our messages. Effective communication will never be obsolete.

—Kathie Kishaba
Deputy Director

What's INSIDE

San Clemente Dam Demolition… *see page 6*

On the Cover:
Removal of the seismically unsafe San Clemente Dam reopens historic spawning grounds to endangered steelhead trout.

Photo above:
Looking downstream from within the former reservoir, all that remains of San Clemente Dam is the concrete embedded in the channel walls. The restored reach of the Carmel River now flows unimpeded.

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Reaching a Milestone

Truckee River Operating Agreement Implementation to Benefit California and Nevada

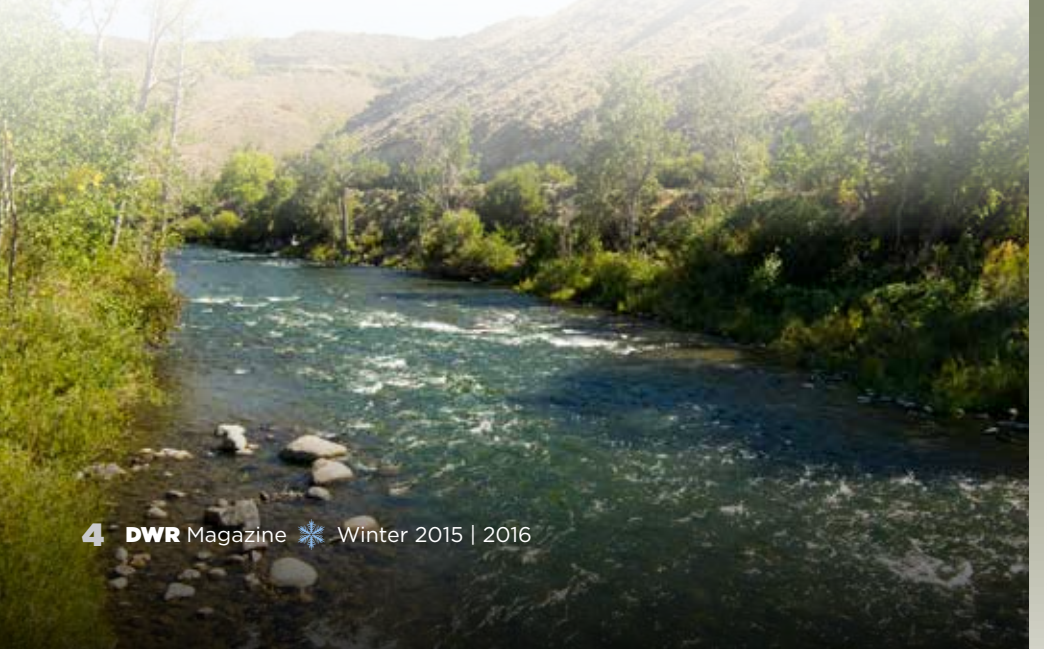
To celebrate implementation of the landmark Truckee River Operating Agreement this month, DWR and other major TROA signatories—the U.S. Department of Interior, the states of California and Nevada, the Pyramid Lake Paiute Tribe and the Truckee Meadows Water Authority gathered on January 5, 2016 in Reno.

The Agreement improves conditions for the endangered Cui-ui and the threatened Lahontan Cutthroat Trout in the Truckee River Basin, species vital to the Pyramid Lake Paiute Tribe and the Pyramid Lake fishery. It will enhance Truckee River water quality, instream flows and recreational opportunities and allow for increased municipal, industrial and environmental drought protection.

The 1990 Truckee-Carson-Pyramid Lake Water Rights Settlement Act resolved more than a century of water rights conflict and created an interstate allocation between California and Nevada for the waters of the Lake Tahoe, Carson and Truckee River basins. The Act required that the Truckee River Operating Agreement be executed and implemented before the interstate allocations could take effect.

DWR, together with the State Water Resources Control Board (SWRCB), represented California in the 1990 Settlement Act negotiations. DWR was the lead for California in the TROA negotiations and the TROA's environmental review process, coordinating with the Department of Fish and Wildlife and SWRCB.

Above: Integrated Regional Water Management Chief Arthur Hinojosa speaks at January event. DWR participants included **Left to Right (Back Row)** Tom Scott, Tim Nelson, Paul Larson, Eric Hong, Arthur Hinojosa, David Willoughby, Gary Lippner **(Front Row)** Anecita Agustinez, Jeanine Jones.



DWR magazine

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On the Road to Recovery

Knights Landing Outfall Gates Project helps keep salmon from straying from the Sacramento River

The Knights Landing Outfall Gates project, the first of several projects focused on salmon recovery in the Sacramento River and its tributaries, will improve passage conditions for Sacramento River salmon this winter.

On October 22, 2015, state, federal and local officials celebrated the completion of the $2.5 million project that retrofits a 100-year-old structure in Yolo County to ensure safe passage for salmon. At the event, DWR Director Mark Cowin ***(at right)*** highlighted the integration of fish, farm, water supply and waterfowl benefits in the project. This integrated species protection, water supply and flood risk reduction project developed strong support and funding from broad beneficiaries, and it is an example of successful integrated water management coordination and project implementation.

The barrier keeps fish from straying into the Colusa Basin Drain through the outfall gates and being stranded in the basin where spawning would be futile. The Knights Landing Outfall Gates fish barrier was installed by Reclamation District 108. It is maintained by DWR and owned by the Central Valley Flood Protection Board.

In spring 2013, an estimated 600 endangered winter-run Chinook salmon strayed into the Colusa Basin Drain. These salmon, which make up a large portion of that year's cohort, traveled as far as 70 miles to the drain that does not reconnect with the Sacramento River providing no suitable spawning habitat. Although the stray salmon were trapped and returned to the Sacramento River, the stress on the rescued fish may have prevented them from spawning.

Concrete wing walls and a metal picket weir to block salmon from getting through the Knights Landing Outfall Gates were installed. This fish barrier prevents salmon from leaving the Sacramento River while also maintaining outflows and appropriate water surface elevations. The project also repaired levee erosion along the Colusa Basin Drain channel, providing flood risk reduction benefits.

As the local project lead, Reclamation District 108 funded the planning, permitting and design with construction costs paid by several agencies, including $300,000 from DWR, $300,000 from the California Department of Fish and Wildlife and $1.5 million from the Bureau of Reclamation. DWR was involved in the design and permitting review in order to ensure that the project was successful and sustainable.

This is one of the several projects underway as part of the California EcoRestore program created in April of 2015 to accelerate restoration efforts over the next four years. Under this program, Governor Edmund G. Brown Jr. directed the California Department of Fish and Wildlife, DWR and other agencies to restore 30,000 acres of habitat in the Sacramento-San Joaquin Delta. Fish passage projects in the Sacramento Valley are critical for enhancing conditions for salmon and sturgeon migrating through the Delta.

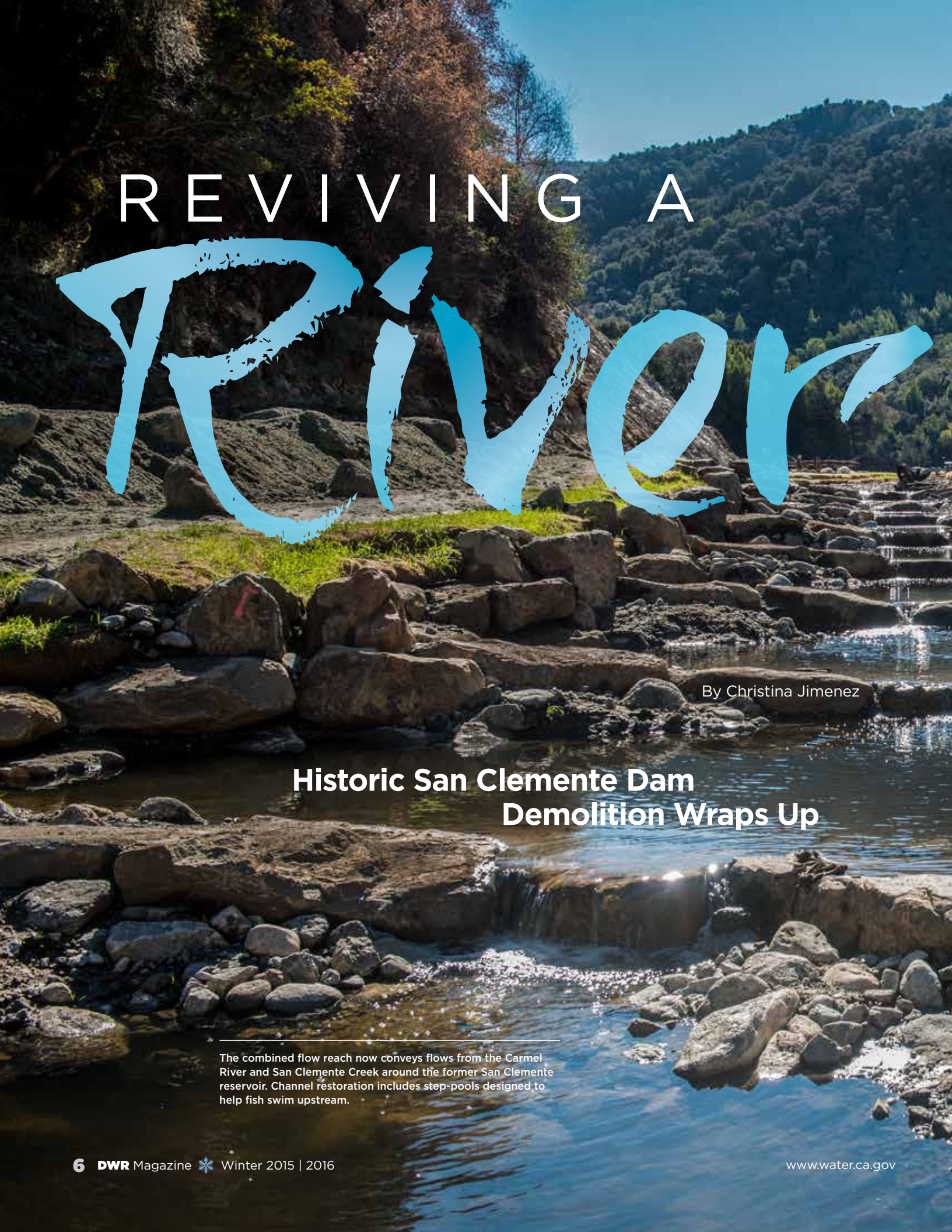
"This project is an example of our commitment to making life better for fish in California," said Chuck Bonham, Department of Fish and Wildlife Director. "But it is just the beginning of a larger effort to get things done."

For project information, view the video at **rd108.org/video-klog/**
To learn more about other California EcoRestore projects, see **resources.ca.gov/ecorestore/**

REVIVING A River

By Christina Jimenez

Historic San Clemente Dam Demolition Wraps Up

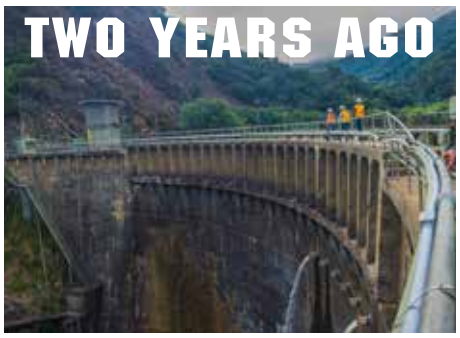


The combined flow reach now conveys flows from the Carmel River and San Clemente Creek around the former San Clemente reservoir. Channel restoration includes step-pools designed to help fish swim upstream.

California Department of Water Resources

A milestone in California dam history was marked in 2015 by DWR's Division of Safety of Dams (DSOD). Under DSOD's direction, the seismically unsafe San Clemente Dam, which posed a danger to people, homes and infrastructure along the Carmel River, was safely removed. Removal of the 106-foot-tall, 94 year-old dam became the largest such project in California history.

Throughout the removal process, DSOD engineers and geologists analyzed and inspected each component.



Above: DSOD employees inspecting San Clemente Dam include Engineer Kristen Martin, Engineering Geologist Robert Burns and Supervising Engineer Erik Malvick.

Above: In the dewatered reservoir, excavators and trucks remove sediment in 2014 in preparation for the Diversion Dike constructed later that year to divert the Carmel River and retain reservoir sediment.

Above: From July to August 2015, the 300-foot long, 106-foot tall San Clemente Dam in Monterey County was removed in four weeks using excavators equipped with hydraulic hammers.
Left: DSOD's Engineer Kristen Martin inspects the project.

"Our main objective was to confirm that an obvious threat to the downstream population would not exist after the dam was removed." said DSOD Engineer Kristen Martin with the Design Engineering Branch. "We independently evaluated designs to ensure the safety of the project."

DSOD and California American Water (Cal Am), the dam owner, worked together to reduce the risk of dam failure after DSOD evaluated and determined that the thin concrete arch dam was seismically unstable. The final solution involved relocating and stabilizing the sediment that had accumulated behind the dam, re-routing the Carmel River, demolishing the dam and providing habitat restoration for the Carmel River channel.

"There have been a number of Department engineers, environmental scientists and attorneys from DSOD, South Central Region Office and our legal office working on this project for decades," said David Gutierrez, Chief of DSOD. "There were complex engineering, financial and environmental issues to resolve and sometimes competing interests to overcome. All this hard work resulted in a unique project that met all goals including eliminating a long-standing threat to both people and the environment."

> Our main objective was to confirm that an **obvious threat** to the downstream population would not exist after the dam was removed.
>
> —Kristen Martin, *DSOD Engineer Design Engineering Branch.*

Today, where the concrete dam once impeded Carmel River flows, the water is flowing freely again, providing habitat for endangered South Central steelhead trout, California red-legged frogs and other native species.

"However, the build-up of sediments behind the dam, which filled 95 percent of the reservoir's capacity and the rerouting of the Carmel River flows through San Clemente Creek on the upstream side of the dam were not the only things that made this project unique and complex," said Supervising Engineer Daniel Meyersohn of DSOD's Design Engineering Branch. "The fact that this was a design-build project added to its intricacy. Phases of the project were constantly being designed, reviewed, concurred with, and then built, which forced us to adapt and expedite our process."

Assessing Stability

"In order to divert the river into its new reroute channel, a diversion dike was constructed across the old course of the Carmel River at the upstream end of the sediment stockpile," said DSOD Geologist Robert Burns. "Located approximately one mile up from where the dam sat, the dike also serves as a sediment retention structure and is

made of rock excavated from the new reroute channel."

"It was our job to evaluate the stability of the retention structures," said Martin. "We used dynamic computer modeling to verify stability of the structures during anticipated earthquake loading. We ran 10 virtual earthquakes through each model to evaluate the dynamic behavior of each structure."

DSOD engineers plugged in the geometry of the designs, along with soil properties from field investigations—including density and strength—to analyze the structures.

"We also created computer models in slope stability software to estimate the factor of safety in the excavated rock slopes," said DSOD Supervising Engineer Erik Malvick. "For DSOD, our biggest concern with the reroute channel was the potential for a catastrophic failure of the rock slopes, and our analysis showed that was unlikely."

Construction and Demolition

Starting in June 2014, crews stockpiled and stabilized an estimated 2.2 million cubic yards of sediment that sat behind the dam to ensure it would not travel downstream once the dam was removed. The sediment was abandoned in the former Carmel River arm of the reservoir, stabilized at the upstream end by the diversion dike and at the downstream end by the stabilized sediment slope.

Simultaneously, crews excavated a reroute channel through a ridge about one mile upstream from the dam to reroute the Carmel River around the sediment stockpile and into San Clemente Creek, forming a combined flow reach. The new Reroute Channel measures 220 feet tall at its highest point, 120 feet wide and 550 feet long.

"During construction, DSOD engineers and geologists periodically inspected the engineered structures." said Martin. "We reviewed the quality and placement of the excavated rock at the diversion dike and stabilized sediment slope to ensure it met specifications.

"From a geological perspective, we inspected the foundations and abutments of the stabilized sediment slope and the diversion dike to ensure that they would be constructed against firm competent rock for their entire height and not against weak erodible rock," said Burns.

The 300-foot-long dam was removed in four weeks, beginning July 31, 2015 by excavators equipped with hydraulic hammers. During the removal of the dam, as well as during the excavation of the new channel, DSOD geologists inspected the project site for weak rock and soil.

"Inspections ensured that the contractor was not leaving behind weak rock or soil of sufficient volume to block the Carmel River if canyon walls were to fail after the project was completed," said Burns.

A Channel for Fish to Thrive

Outside of DSOD's dam safety responsibilities, major environmental restoration efforts have been made in the reroute channel and new combined flow reach to improve fish passage up the Carmel River. This work includes the construction of 53 step pools, two plane bed reaches and one riffle and pool reach. The step pools will allow fish an easier hike upstream and improve spawning grounds. Further restoration work by Cal Am is planned for 2016. The final project cost is estimated at $84 million.

Looking Back and Moving Forward

Supervising Engineer Rashid Ahmad, now a retired annuitant with the Division of Engineering, was the first design engineer at DSOD to work on the San Clemente Dam removal project in the 1980s. He recently visited the site to inspect the dam removal.

"While I was at the abutment, my mind went to the possible setting in 1921 when the dam was completed," said Ahmad. "The people must have gathered there to celebrate the completion of this 'marvel of engineering' which would guarantee a reliable supply of water for them. Here we are almost 100 years later. Unforeseen consequences of silting, seismic safety and our evolving values about the environment have forced people to remove what they had built with their own hands. I wonder what changes the next 100 years will bring."

To learn more about this project, visit **sanclementedamremoval.org/**

Below: (left to right) Inspecting the San Clemente Project to ensure the stability of the hillslopes surrounding the demolished dam are DOE Retired Annuitant and original DSOD Design Engineer Rashid Ahmad, consulting engineer John Roadifer, DSOD Engineering Geologist Robert Burns and current DSOD Design Engineer Kristen Martin.

Going DEEP

DWR Helps Agencies Reach Groundwater Sustainability

By Lauren Hersh

The Sustainable Groundwater Management Act (SGMA) is landmark legislation that seeks to bring key groundwater basins into balance for the long term, helping communities cope better with climate change and future droughts. Now a year and a half into SGMA, DWR provides the framework, technical guidance and financial support needed to assist local agencies reach groundwater sustainability. That framework comes in the form of regulations that first established groundwater basin boundaries, earning DWR high praise for its public outreach.

The California Water Commission Commends DWR

At the California Water Commission (CWC) meeting in Yuba City on October 21, 2015, DWR's Sustainable Groundwater Management Executive Program Manager David Gutierrez and Basin Boundary Regulations Project Manager Steven Springhorn presented an overview of the SGMA timeline and the final basin boundary regulations for the CWC's consideration. What happened next was beyond expectations.

Commissioners lauded DWR for its stakeholder engagement, outreach to the public and the CWC, clarity of the regulations, transparency and the number of supportive letters the CWC received from stakeholders.

"I think your commitment to communications and stakeholder engagement was a high success … It sets the tone very favorably for the next level of work," said Commissioner David Orth.

The CWC also heard overwhelmingly positive public comments, in some cases from individuals representing groups that are often at odds. John Woodling, Executive Director of Sacramento Groundwater

Authority commented, "DWR called this their 'Summer of Outreach' on SGMA, but it sort of turned into their 'Summer of Love,' I say, because there's been nothing but positive comments on the process, the interactiveness, the collaboration between the state and locals…"

By unanimous vote, the CWC adopted the new basin boundary regulations and DWR marked its first major SGMA milestone.

There was positive practical outcome for agencies, as well. By hitting SGMA's January 1, 2016 deadline for adoption of DWR's basin boundary regulations six weeks early, DWR and the CWC effectively gave local agencies an additional six weeks to prepare their requests for changes to the boundaries of their basin or subbasin. DWR began accepting those requests on January 1, 2016 and will continue to do so until March 31, 2016.

Groundwater Sustainability Plans

Work on the next set of SGMA-mandated regulations began long before the ink was dry on the basin boundary regulations. By June 1, 2016, DWR is required to adopt emergency regulations for evaluating and implementing Groundwater Sustainability Plans (GSPs) to achieve the legislative intent of the SGMA. The Sustainable Groundwater Management (SGM) Program, led by DIRWM's Trevor Joseph, established a

Senior Engineer Glenn Moeller of DWR's Division of Engineering visits the site of a new water well being installed in East Porterville on October 13, 2015.

SGMA'S 2015 HIGHLIGHTS

58

Basins that were either fully or partially claimed by a local agency(s) when deciding to become or form a Groundwater Sustainability Agency (GSA).

51

Individual GSA formation notices filed with DWR.

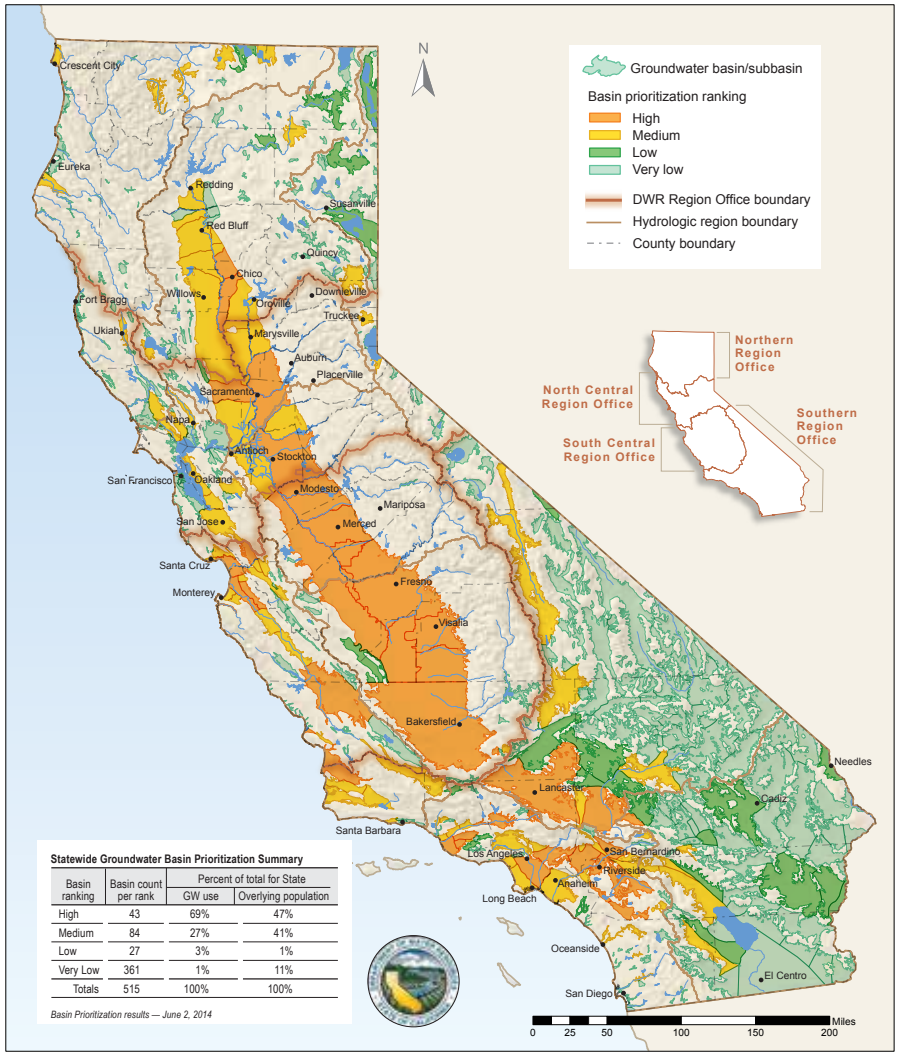
18

Basins that have complete, significant or incidental GSA formation overlap that must be addressed by the local agencies involved.

1

GSAs that were formed using a joint powers agreement.

CASGEM Groundwater Basin Prioritization



comprehensive, multi-phased outreach approach to promote better understanding of issues and topics and collect information. Dividing 10 major topic areas into three separate batches, DWR created and distributed discussion papers ranging from "Pre-SGMA Conditions and Undesirable Results" to "Intra-Basin Coordination Agreements" and "Adaptive Management and Focus Areas" in order to advance and focus conversations with stakeholders.

Given the tight timeframe and the potential complexity of regulations for the GSPs, DWR met regularly with advisory groups and conducted public meetings and webinars to gather perspectives from other statewide stakeholders, partners, local agencies and the CWC. As with the basin boundary regulations, that input provided valuable insights that have informed the development of the draft GSP regulations. DWR released the draft GSP regulations for public comment in January 2016, and considering that feedback, will make revisions to the regulations before again releasing them for public comment by early spring.

Role Redefined—SB 13

Senate Bill (SB) 13 (Pavley), which was passed in September 2015 and became law in January 2016, amended or clarified numerous Water Code sections of the SGMA. Among other things, SB 13 changed DWR's role with respect to reviewing and posting groundwater sustainability agency (GSA) formation notices. These changes generally relate to DWR's review of all GSA formation notices for completeness, overlapping GSA boundaries and exceeding service area jurisdictions as a GSA. DWR is again reaching out to local agencies to present the GSA information related to SB 13 and to explain how SB 13 will impact existing GSA formations.

In response to these changes, DWR has developed guidelines for local agencies to use after they have decided to become or form a GSA. The guidelines outline the information that local agencies must submit after the decision to become or form a GSA has been made. DWR uses this information to perform completeness reviews for all GSA formation notices. Under SB 13, only complete GSA formation notices will be posted on DWR's GSA formation table and GSA interactive map.

The Road Ahead

Even with notable successes, there is no time to rest. Deadlines continue to loom and there is much work to be done. In addition to the June 2016 GSP regulations deadline, DWR will revise Bulletin 118 by the start of 2017, updating the basin boundaries, basin prioritization and the status of the GSPs and will identify the 21 over-drafted basins. Also due early in 2017 are the Best Management Practices for implementing sustainable groundwater management and a report on the amount of water that's available for groundwater replenishment.

GSAs must be formed by June 30, 2017. By January 31, 2020, critically overdrafted basins must each have an approved GSP—their individual plan for bringing that basin into compliance with sustainability goals. By January 31, 2022, all other high and medium priority groundwater basins must follow suit. While there are yet many steps ahead to implement the historic water law that will bring groundwater security to California, clearly we are moving forward.

DWR Honored for Groundwater Work

By Lauren Hersh

DWR was honored with the 2015 Kevin J. Neese Award at the 24th Annual Groundwater Resources Association Annual Meeting in Sacramento last October. Established in 1999 by the Groundwater Resources Association of California (GRA) to honor the late GRA Director, geologist and attorney Kevin J. Neese, the award recognizes a recent, significant accomplishment by a person or entity that fosters the understanding, development, protection and management of groundwater.

DWR was recognized for its "Comprehensive Response to California Groundwater Challenges and to the 2014 Sustainable Groundwater Management Act," which included more than a dozen achievements by DWR staff across the Department. Some of these achievements include "Quickly Implemented Numerous Aspects of the 2014 Sustainable Groundwater Management Act," "California Statewide Groundwater Elevation Monitoring," "Significant Drought Response," "Central Valley Groundwater-Surface Water simulation model (C2VSim)" and "California Water Plan Updates." As a Neese Award-winner, DWR is in good company. Last year's recipient was Governor Edmund G. Brown Jr.

Thank you to these contributors and others not in photo who have worked tirelessly on the programs and projects that earned DWR this award.

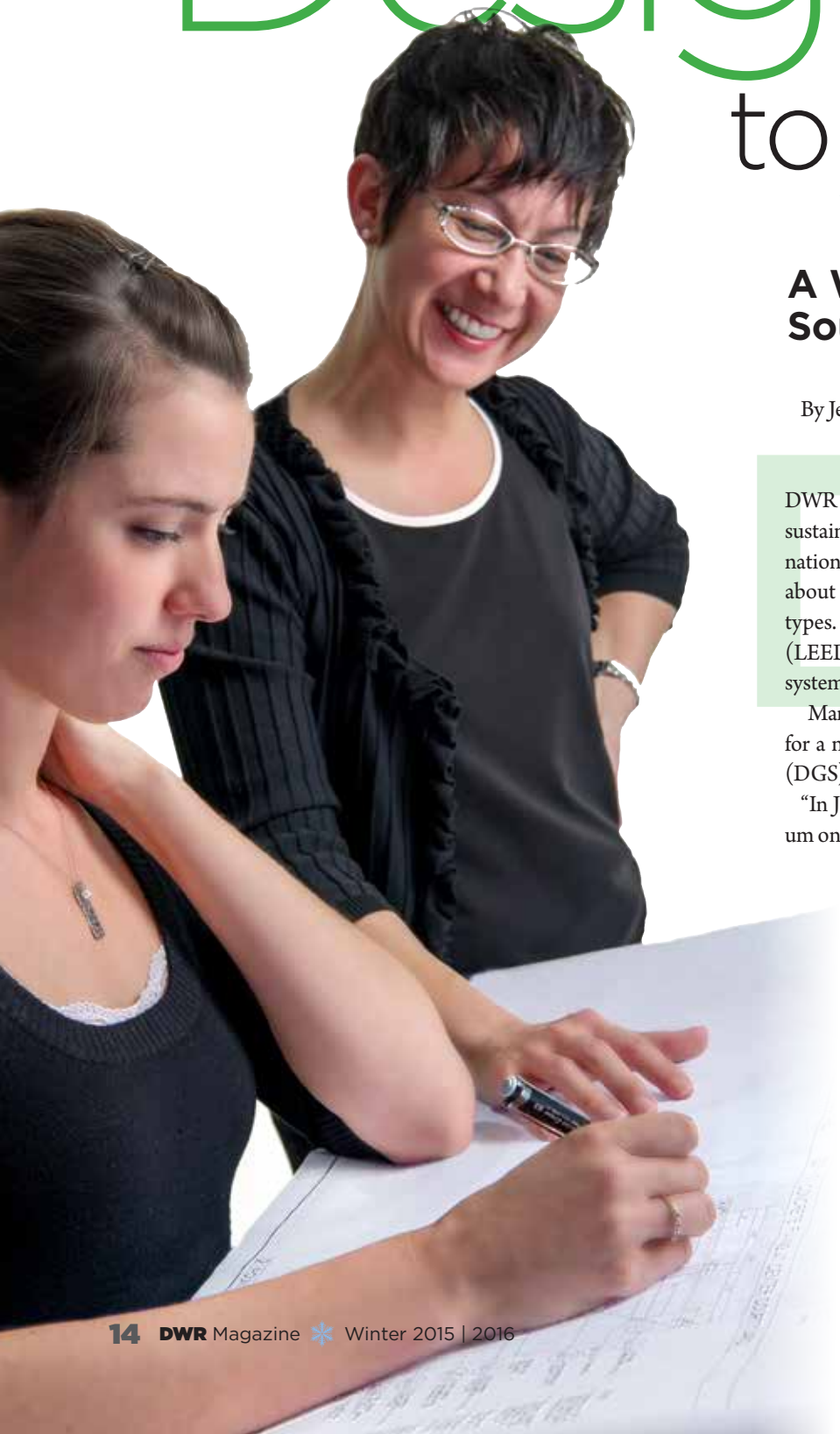
Accepting the award on behalf of DWR are **Left to right (Back Row)** Michelle Dooley, Geology and Groundwater Investigations Section in the Division of Integrated Regional Water Management (DIRWM); Ted Johnson, California Groundwater Resources Association President; Bill Brewster, Geology and Groundwater Investigations Section of DIRWM; Chris Bonds, Future Water Supply Program in the Conjunctive Water Management Section of DIRWM. **(Front row)** Christina Boggs, Geology and Groundwater Investigations Section of DIRWM; Mary Scruggs, Conjunctive Water Management Section of DIRWM, on special assignment in Washington D.C. at the U.S. Department of Agriculture; Lauren Hersh, Sustainable Groundwater Management Program in the Public Affairs Office; Linda Bond, Conjunctive Water Management Section of DIRWM; Brett Wyckoff, Conjunctive Water Management Section of DIRWM.

Right: Other DIRWM participants included Debbie Spangler, Geology and Groundwater Investigations Section in Regional Planning Branch and Roy Hull, Geology and Groundwater Investigations Section in Regional Planning Branch.

Designing to Save

A Water Wise Landscape for South Central Region Office

By Jennifer Iida



DWR Sustainability Coordinator Mary Simmerer is leading the sustainable infrastructure. She's one of the first 50 people in the nation to become a certified Envision Trainer teaching others about industry-wide sustainability metrics for all infrastructure types. Similar to Leadership in Energy & Environmental Design (LEED) for buildings, Envision is a holistic sustainability rating system for all types and sizes of civil infrastructure.

Mary's focus on a more resilient landscape was also the impetus for a new interpretation by the Department of General Services (DGS) of the Governor's Emergency Drought Proclamation.

"In January 2014, Executive Order B-18-12 placed a moratorium on new non-essential landscaping and the DGS definition for non-essential landscaping was 'no new planting' so even if you were removing turf, under the moratorium you couldn't plant drought tolerant plants instead," said Simmerer. "This issue directly affected our turf replacement program and all of the landscaping efforts, as we're trying to create a sustainable landscape transition." On October 15, 2015 a DGS

Left to Right: Kristin Jacobs and Cassandra Nguyen Musto, DWR landscape architects in the Division of Flood Management, review drawings for the new water wise landscape at the South Central Region Office.

Management Memo for state buildings provided for exemptions to the policy.

One of the first projects to be submitted for exemption will be the water wise landscaping for DWR's South Central Region Office in Fresno which houses about 60 DWR employees.

"We're replacing 5,000 square feet of turf with drought-tolerant plantings and we'll also have a water reuse system in place," said Simmerer. "Water that was being used to cool the building for energy efficiency will now be reused for landscape, saving up to 100,000 gallons of water a year."

Built in 1967 and owned by DGS, the South Central Region building has been using about 100,000 gallons of water during the summer months for the air conditioning unit.

The Fresno project is DWR's first project using the Envision rating tool. Based on an initial, informal assessment, the Fresno project has an excellent opportunity to win an Envision award. Sustainability awards for DWR projects are an important way for DWR to demonstrate its leadership and commitment to conserving and enhancing our water resources.

Envision awards are based on sustainability factors related to climate and risk, natural world (our environment), resource allocation, leadership and quality of life.

"You are graded by an independent third party in each of those areas," said Simmerer. "You garner points if you demonstrate everything you did was more than what was required by law, such as enhancing the quality of life in your area, demonstrating leadership and involvement in the community. You can then qualify for a bronze, silver, gold or platinum award."

The Envision tool was developed in collaboration between the Zofnass Program for Sustainable Infrastructure at the Harvard University Graduate School of Design and the Institute for Sustainable Infrastructure. The Institute for Sustainable Infrastructure, a not-for-profit education and research organization, was founded by the American Public Works Association, the American Council of Engineering Companies and the American Society of Civil Engineers. The benefits of using the Envision infrastructure rating tool include long-term viability, more integrated projects with fewer negative impacts on the community, potential to save money over the entire life span of the project and credibility of a third-party rating system.

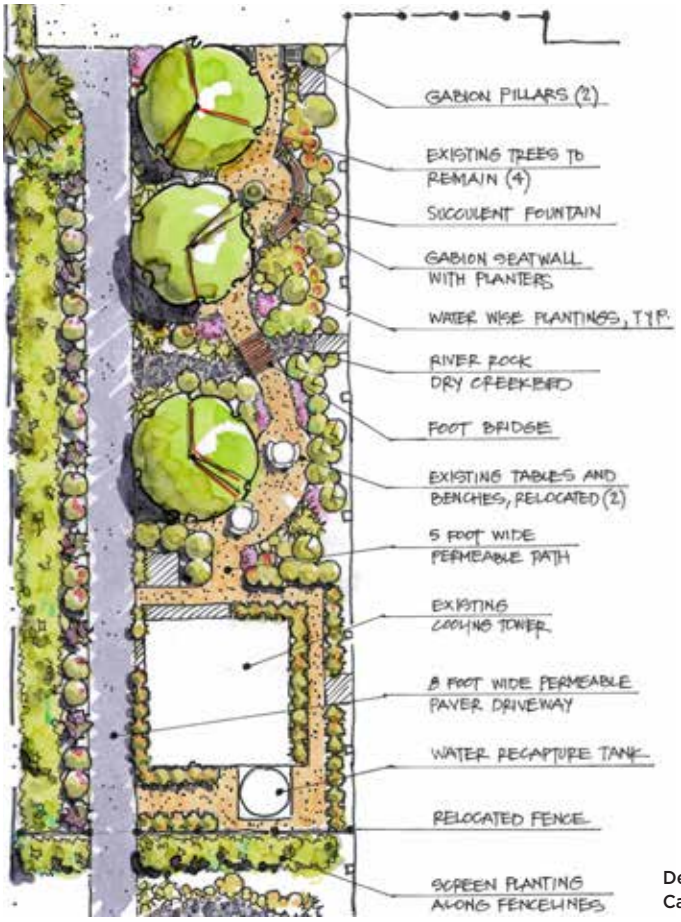
The Fresno building sustainable landscape transition started in early December 2015 and the project should wrap up in 2016.

For many years, DWR has been an innovative partner on numerous activities and initiatives to educate the public about the benefits of sustainable landscaping. California's drought conditions present an opportunity to move away from high maintenance and energy intensive irrigated landscaping to more water saving landscapes by using locally-adapted native plants and groundcover.

"This whole transition demonstrates not sacrificing aesthetics or use, but getting rewards for holistic thinking and utilizing new knowledge, by applying it and getting a better world as a result," said Simmerer, "and so this is a big picture message that one little project in Fresno can paint."

For Envision information go to **sustainableinfrastructure.org**

The Plan



Northwest view of current turf area at the South Central Region Office. Concept drawing (left) shows the east side detail of SCRO's new landscape to be installed in 2016.

Design Drawings by Cassandra Nguyen Musto

Saving Water and Energy Statewide

Projects Funded by Grants Will Reduce Water Use and Impacts due to Climate Change

By Christina Jimenez

DWR is a major player in the effort to save water, lower energy use and reduce greenhouse gas emissions in California.

DWR recently awarded 22 grants to fund 25 projects expected to save an estimated 270,000 acre-feet of water while reducing greenhouse gas emissions by approximately 200,000 metric tons.

"The Water-Energy Grant Program with proceeds from California's Greenhouse Gas Reduction Fund, is the newest addition to the suite of DWR grant programs," said Principal Engineer Tracie Billington, who leads the Division of Integrated Regional Water Management's (IRWM) Financial Assistance Branch. As a whole, these types of grant programs have been foundational to advancing integrated water management in California.

The 25 projects combat drought and climate change and will be implemented by public agencies and non-profit organizations, such as East Valley Water District, City of Orange Cove and South-East Madera County United Foundation Incorporated. The projects include water meter installations, distribution of water-efficient fixtures, installation of computerized watering systems and drought-tolerant landscapes.

The 25 projects collectively were awarded $28 million, ranging from $24,000 to $2.5 million. Seventy percent of the $28 million is allocated for projects that benefit disadvantaged communities.

"The process begins with the passing of legislation in this case, an appropriation from the Greenhouse Gas Reduction Fund by SB 103 in 2014 and Assembly Bill 91 in 2015," said Project Manager Craig Cross of IRWM's Planning Section. "Subsequently, through a public process, we then developed the program guidelines and proposal solicitation package, solicited applications, reviewed and ranked applications and awarded funds.

Staff from various DWR programs supported the development of this new grant program. DWR's Climate Change program developed a tool that allows grant applicants to simply calculate estimates of the three key decision factors for determining project eligibility and ranking projects for possible funding– water savings, energy savings and greenhouse gas reductions. IRWM staff review invoices and progress reports, perform site visits and ensure that grantees are abiding by all aspects of the agreement.

The following projects are examples of some of the programs DWR makes possible through the grant program.

Free Installs

Focusing solely on disadvantaged communities in the Sacramento Region, the Regional Water Authority (RWA) intends to replace up to 30,000 inefficient household fixtures as part of the Sacramento Region Water Energy Efficiency Program. The $2.5 million project will offer customers free installation of water- and energy-efficient toilets, showerheads and faucet aerators in their homes, saving more than 1.5 billion gallons of water and more than 160 million kilowatt-hours of energy. In addition to free home installations, RWA teamed up with Rebuilding Together Sacramento and the Sacramento City Unified School District for the distribution of water efficient fixtures at events.

Home Conservation Kits

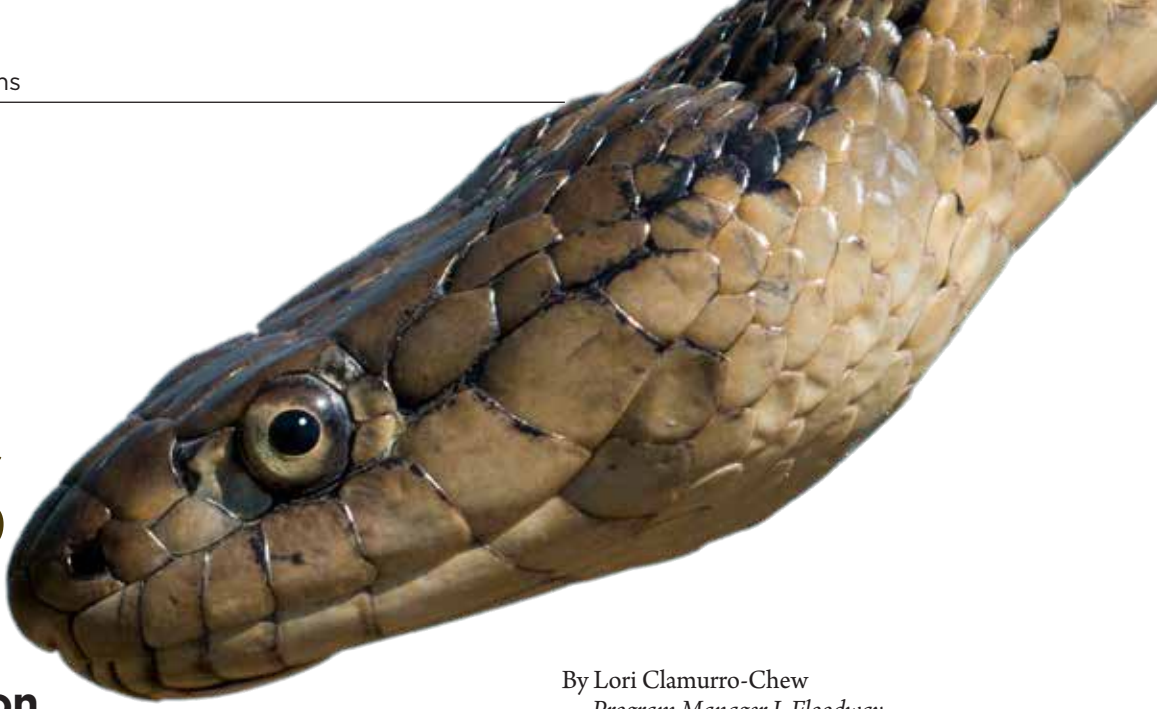
In the small Central Valley town of Alpaugh, the Alpaugh Community Services District (ACSD) is creating and distributing water conservation kits to its customers with its allocation of $34,953. Available in English and Spanish, the kits include shower and sprinkler timers and low-flow showerheads.

The new fixtures and timers are expected to save Alpaugh 25 million gallons of water, nearly 1.9 million kilowatt-hours of energy and more than 500,000 kilograms of carbon dioxide equivalent in greenhouse gas reduction.

For more information, visit DWR's Water-Energy Grants Program website at **water.ca.gov/waterenergygrant/index.cfm**

On behalf of DWR's Water-Energy Savings Program on January 22, 2016, Dane Mathis of DWR's Integrated Regional Water Management presents a more than $600,000 check to be used to reduce runoff and water usage by installing smart irrigation control systems in up to 22 Bakersfield city parks.

New Digs



Advance Mitigation Project Provides Habitat for Giant Garter Snake

By Lori Clamurro-Chew
Program Manager I, Floodway Ecosystem Sustainability Branch

Photos by U.S. Fish and Wildlife and Ivan Parr

On November 5, 2015, DWR's Floodsafe Environmental Stewardship and Statewide Resources Office (FESSRO) joined the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW) and Westervelt Ecological Services (WES) in celebrating completion of the 281-acre Grasslands Mitigation Bank in Merced County. This project is the result of the vision shared by DWR and the USFWS to create new habitat for the threatened giant garter snake (GGS) in the San Joaquin Valley. It is DWR's first project implemented to provide advance mitigation for the potential ecological impacts of future flood risk management activities.

Once ranging throughout the Sacramento and San Joaquin Valleys, GGS has disappeared from approximately 98 percent of its former habitat in the San Joaquin Valley, and is listed under both the federal and State Endangered Species Acts. The protection of seasonal wetlands in Merced County is a priority of the USFWS's Draft GGS Recovery Plan.

DWR provided $4.64 million in Proposition 1E funding in 2013 to purchase 130 advance mitigation credits for GGS at the Grasslands site; the credits were purchased at well below market cost. As of December 1, 2015, 40 percent of the credits have been released and are available to DWR and local levee maintaining agencies to mitigate for unavoidable impacts to GGS in the San Joaquin Valley and South Delta, as required by fish and wildlife agencies.

In the case of the Grasslands Mitigation Bank, the ecological benefits to GGS go beyond the boundaries of the bank itself, as it takes advantage of the seasonal wetlands at the adjacent Volta Wildlife Area, habitat used by the last known breeding population of GGS in the San Joaquin Valley. With the completion of the Grasslands Mitigation Bank mere feet away from the Volta Wildlife Area, part of Volta's GGS population is expected to easily colonize the new wetlands created at the project site and allow for the release of all remaining credits.

WES, a private mitigation banking company, designed the project and facilitated the approval process through the USFWS, CDFW, U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. WES will manage and maintain the habitats at the Grasslands Mitigation Bank in the future.

The Grasslands Mitigation Bank is a great example of how agency cooperation and public-private partnerships can ensure the health and safety of our citizens, homes and property while protecting endangered species.

Right: Ken Sanchez, Assistant Field Supervisor of the U.S. Fish and Wildlife Service Sacramento Fish and Wildlife Office, and Terri Gaines, Program Manager II of DWR's FESSRO Floodway Ecosystem Sustainability Branch, turn the first of three valves to release water to mitigation bank.

EXTREME NEEDS

Lake Don Pedro Community Services District well funded by DWR

By Jennifer Iida

Could a water reservoir holding more than a million acre-feet actually go dry? It was unthinkable, yet that was a possibility in December 2014 as Lake McClure in Mariposa County continued to dwindle to nearly nothing.

That's when the Lake Don Pedro Community Services District (LDPCSD) declared a water supply emergency to stop the dwindling.

The Governor's Office of Emergency Services (CalOES) stepped in under the Standardized Emergency Management System (SEMS) structure, and the call for help went out to other state and federal departments and agencies.

In early 2015, the LDPCSD requested an emergency water supply grant from DWR, the State Water Resources Control Board (SWRCB) and the Federal Department of Agriculture. The grant would allow quick completion of emergency groundwater wells to serve the community of approximately 2,500 in the Coulterville and La Grange areas of Mariposa and Tuolumne Counties in the event Lake McClure continued to dry up.

"It's one of the several projects we've worked on, consistent with our role to supplement other agencies in finding solutions for communities and individuals to respond to the drought," said Greg Vaughn, DWR Drought Management Operations, "Lake McClure was significantly lower compared to historical water levels."

Lake McClure is one of only eight California reservoirs that can store more than one million acre-feet (AF), yet McClure held just 72,000 AF in December 2014, only seven percent of its 1,026,000 capacity.

Left to Right: Pipe layers install piping at the Medina well in La Grange on December 17, 2015. DWR's Associate Governmental Program Analyst Jeremy Callihan (left) and Engineer Robert Trang view the Medina well that is connected to Lake Don Pedro Community Services District.

> This project was a great example of how California agencies **working together can effectively respond** during an emergency . . .

Page 18: Lake McClure, which provides water for the Lake Don Pedro Community Services District, hit its lowest storage on record at 63,819 acre-feet in December 2015. DWR funded a grant for emergency groundwater wells to serve approximately 2,500 in the Coulterville and La Grange areas of Mariposa and Tuolumne counties. The wells are now producing approximately 350 gallons of water per minute.

The lake's surface elevation was 593 feet above sea level, just five feet above the all-time low of 588 feet, and the reservoir was dropping about a foot a day.

To help keep the water flowing to local residents, DWR's Financial Analysis and Risk Management Office (FARMO) offered remaining bond money to drill test sites for several wells within the same area.

"The office funded $400,000 from the Proposition 81 Bond Law Program of the $1.83 million that was necessary to fund this drought stricken project," said Linda Ng, DWR Chief of the FARMO.

"We were able to provide funding relatively quickly while they were waiting for Water Board and USDA funding," according to Jeremy Callihan, DWR FARMO Analyst. "We visited the site to see the effects of the drought on this community, and it really brought it home. It's all about providing good water to these folks."

The drought wasn't the only water problem plaguing LDPCSD. It was also suffering from leaky infrastructure. If the system were to run out of water, then the district would either do without or would have to truck water to the water treatment plant at a cost of $20,000 per day.

The project provided a sufficient alternative water supply to the community during periods when their surface water was in jeopardy and successfully averted the emergency. The wells are now producing approximately 350 gallons of water per minute. When fully operated, the wells can also act as a backup water supply in future droughts, plus provide additional supply to a growing community.

"This project was a great example of how California agencies working together can effectively respond during an emergency and solve a critical problem in a relatively short amount of time," Vaughn said.

An additional DWR grant kicked in after the money above was allocated. A Proposition 84 Integrated Regional Water Management (IRWM) grant totaling approximately a million dollars went to the LDPCSD Drought Emergency Ground-water Supply Wells Project, one of three projects included in the Yosemite-Mariposa IRWM grant proposal. Lake McClure is about 40 miles east of Modesto. It is formed by the New Exchequer Dam along the Merced River, a tributary of the San Joaquin River.

THE FUNDING SOURCE

Total funding for the construction of the water supply replacement wells was from multi-agency funding sources as follows:

DWR Emergency Response Grant	$200,000
SWRCB Emergency Response Funds	$439,100
USDA Funds	$500,000
DWR Proposition 81 Grant	$400,000
Don Pedro CSD Funding	$289,435
Total	**$1,828,535**

Habitat Restoration

Red Hill Bay Marina Project at the Salton Sea to Bring Back Wetlands

By Doug Carlson

Unintended Consequences, according to Wikipedia, the Internet's information source on the quick, are "outcomes that are not the ones foreseen and intended by a purposeful action."

What happened in the Imperial Valley of Southern California more than a century ago as summarized by Wikipedia surely fits that description.

"In an effort to increase water flow into the (Salton Sink in the Colorado Desert of Imperial and Riverside counties) area for farming, irrigation canals were dug from the Colorado River into the valley. Due to fears of silt buildup, a cut was made in the bank of the Colorado River to further increase the water flow.

"The resulting overflow overwhelmed the engineered canal, and the river flowed into the Salton Basin for two years, filling the historic dry lake bed and creating the modern sea, before repairs were completed."

That's how a region that purposefully sought to bring water to irrigate future farmlands wound up with California's largest lake —35 miles long, 15 miles wide and up to 44 feet deep totaling 343 square miles where no crops grow. Unintended Consequences don't get much bigger than that.

The Imperial Valley basin is one of Southern California's lowest regions—not as low as Death Valley, but still more than 200 feet below sea level. Although the valley had been dry for hundreds of years before the 20th century, the Colorado River had filled the basin with water innumerable times over the millennia thanks to its meandering channel.

Nothing in Mother Nature's plan is static. The Salton Sea is shrinking due to reductions in water deliveries to the Valley, extractions to irrigate agriculture and evaporation. A 2003 agreement, known as the Quantification Settlement Agreement (QSA), adjusted allocations of Colorado River water among numerous agencies and states, thereby reducing the Imperial Valley's share, a principal reason for the sea's shrinkage.

That shrinkage has had significant consequences. As more of the Salton Sea lakebed is

Right: At the Red Hill Bay Restoration Project's groundbreaking event, State Salton Sea Management Program implementation team includes (left to right) Ted Frink, Kent Nelson and Vivien Maisonneuve of DWR and Bruce Wilcox, Resources Agency Assistant Secretary for Salton Sea Policy, and Kealii Bright of Resources Agency.

exposed, habitat for waterfowl and fish is reduced and diminished in quality. A provision in the 2003 agreement requires the State to mitigate for the effects of the QSA.

The consensus among all parties is that something has to be done to reduce and control the impacts of a shrinking Salton Sea. In 2014, the Pacific Institute issued a report predicting that if current trends continue, the next three decades could see 150 square miles of lakebed exposed, releasing "as much as 100 tons of fine dust into the air per day."

"Even at the low (cost) estimate," the report said, "the long-term social and economic costs of a deteriorating Salton Sea could approach $29 billion, well in excess of the projected cost of the State's 2006 revitalization plan."

The Institute's report asserts that exposure to all that dirt, dust and brine contaminated by agriculture runoff would be a critical health hazard to the 650,000 people who live in the region—a population that's expected to nearly double by 2045. Birds and other wildlife that depend on the sea also would be harmed as water quality degrades.

The State's Species Conservation Habitat (SCH) project on the Salton Sea's southern shore is an early step in the effort to reduce the long-term trends. Funded by Proposition 84—the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006—the project's objective "is to demonstrate the State's ability to create managed habitat areas to serve wildlife needs at the sea as well as control dust emission from the playa." DWR staff is working with California Department of Fish and Wildlife to implement the project.

This habitat will support tilapia, a primary food source for migratory fish-eating birds along the Pacific Flyway. Impoundment berms will be built to retain a mix of sea water and New River flows. The saline ponds will be monitored and their operation adjusted to maximize ecological performance. Project managers will control salinity, inflow and water retention time to establish target habitat values that will ultimately support tilapia reproduction and survival.

Kent Nelson, DWR's Salton Sea Program Manager, said the project's initial implementation phase will create two 320-acre ponds. However, the overall project is permitted to expand to 3,770 acres as funding becomes available.

In addition to the SCH project, Proposition 84 funds are also supporting the US Fish and Wildlife Service's development of important wading bird habitat at the mouth of the Alamo River, not far from the SCH project site. This 420-acre shallow water habitat project is located within the Sonny Bono National Wildlife Refuge.

As with the SCH project, sea water will be mixed with river water to manage for optimal salinity. A "playa breaking" ceremony was held in November to celebrate the Red Hill Bay Restoration Project's commencement and bring key stakeholders together.

Don't tell the fish, but they'll be selected based on their suitability as prey for the birds that currently use the Sea for sustenance.

"It's time for the State to make good on its commitments to the Sea," Nelson said. "Once our Species Conservation Habitat concept is proven, the plan is to deploy the concept broadly around the entire Salton Sea playa. It's a big goal, and the demonstration project will help us achieve it."

To learn more about this project, visit **water.ca.gov/saltonsea/**

Mudslide Clogs Aqueduct

Southern Field Division Employees Help Fix the California Aqueduct in Antelope Valley

As California prepared for winter storms, mudflows totaling more than 20,000 cubic yards overtopped the East Branch of the California Aqueduct in mid-October. Southern Field Division employees took quick action to dewater the Aqueduct for the repairs.

"The scale of this storm damage and speed at which it occurred I have not seen anything like this in my career," said Assistant Utility Craftsworker Superintendent Marc Sparks of Southern Field Division, who has worked for 24 years on DWR projects, including mudslide damage to roads and right-of-ways during the 1997 El Niño.

The October 15 thunderstorms over a burned area near Palmdale and uphill of the Aqueduct's pools 47 to 50 led to a 17-foot-high mud and debris flow into the Aqueduct that caused shutdown of normal Aqueduct flows to Antelope Valley Eastern Kern Water Agency. Southern Field Division staff, including utility craftsworkers, Operations and Engineering staff, teamed up to expedite the dewatering of pool 49.

To clean up the area and pump the water out of the Aqueduct, DWR employees worked 16 consecutive 12-hour days pulling out debris that had clogged pumps used to dewater the pool and removing a vehicle from the Aqueduct.

For Utility Craftsworker Supervisor James Wesley, this was the first mudslide into the Aqueduct that he has worked on. "This was

The communication with the supervisors and rank and file was top-notch and made a difference.

—Dave Brown, *Utility Craftsworker Branch Chief Southern Field Division*

different in the sheer size of the slide, but the professionalism and safe work habits of all involved allowed the Department to quickly cleanup and make repairs so we could continue to make water deliveries," said Wesley.

DWR's team of 16 utility craftsworkers and one apprentice operated heavy equipment to remove mud, debris and water from the Aqueduct's pool by October 30. Working under an approximately $1 million contract, the contractor removed and replaced 18 concrete panels in the Aqueduct's liner by November 2.

Due to the drought, water deliveries had been minimal, and there were no major water supply impacts as a result of the incident.

DWR's repair team consisted of Assistant Utility Craftsworker Superintendents Marc Sparks and Mark Kellogg and Utility Craftsworker Supervisors Jim Wesley, Jason Williamson and Reed Barnes. Utility Craftsworkers included Domingo Cabrera Jr., Mike Hindman, Kevin Rivas, Shawn Kredel, Scott Gillman, Dominic Newton, Brian Colbrunn, Chris Fernandez, Ryan Sherman, Gary Fifield, Richard Bergeron, Mat Martin, Phil Clark, Levoys Finley, Constantino Montes de Oca, Steve Smith and Apprentice Kevin Burks. Repairs to equipment, led by Mobile Equipment Superintendent Perry Dunton, were by Heavy Equipment Mechanics Ruben Jaramillo, Salvador Garcia, John Egan and Doug Hill. Southern Field Division's Administration and the Division of Engineering also helped.

A Century+ of Snow Data

By Doug Carlson

Above: Sierra Nevada cabin surrounded by snow in 1967. Frank Gehrke, Chief Snow Surveyor, and John King of the Snow Surveys Section, take first manual snow measurement for the water year 2016 at Phillips Station on December 30, 2015.

When conversation turns to water in California, it often involves conflict. Writers have chronicled the California Water Wars for generations.

Humorist and onetime-Californian Mark Twain allegedly contributed this observation: "Whisky is for drinking. Water is for fighting."

Some doubt the remark's authenticity, but it does describe decades of reality. Water wars have grown out of localism, regionalism and North vs. South, farm vs. town, wealthy vs. poor. California water doesn't lack drama.

Remarkably, that isn't the case about water in its frozen form—snow.

Cooperation has been the key to how DWR and more than 50 other state, federal and local agencies and private companies have measured the Sierra Nevada winter snowpack for generations. Cooperation is even embedded in the program's name—California Cooperative Snow Surveys.

DWR's Frank Gehrke, chief of the program, said cooperation has been "its cornerstone and strength" since the program's inception in the 1920s. "From the very beginning of the surveys," Gehrke said, "the various agencies recognized pretty quickly that if they collaborated and shared their snow measurements, everybody would benefit."

Those measurements are critical in helping water managers anticipate runoff from the mountains with the spring snowmelt. In the current drought, with several major reservoirs holding far less than their historic averages and only about 40 percent of their total capacity, it's essential for managers to know the snowpack's water content.

Snow surveying actually started much earlier than the beginning of California's cooperative program. The National Resources Conservation Service celebrated the centennial of the federal Snow Survey and Water Forecasting Program in 2006 with a series of articles, one of which noted:

"Snow surveying was first invented in the late 1800's in several different locales, and it is difficult to ascertain exactly who was first. In the United States, a professor of Philosophy at the University of Nevada, Reno named Dr. James E. Church brought the fledgling technology from Russia, Germany and Switzerland in 1906 to the Lake Tahoe region to solve a vexing problem—the prediction and hence the wise management of a very limited and often fought-over regional water supply."

Conflicting demands for the Tahoe region's water had strained relationships among communities and water agencies and accentuated the need for accurate stream flow forecasts.

Church worked out a method—still used today—to determine the snowpack's Snow Water Equivalent (SWE) by taking several core samples along a 1,000-foot snow course. Surveyors plunge a tube into the snow to determine its depth and then calculate the SWE by weighing the withdrawn tube and its snow core. The program Gehrke heads probes the snow at more than 300 snow courses throughout the Sierra Nevada using the methodology developed more than a century ago.

Church's foresight about the importance of the snowpack led him to begin his surveys in 1906 on Mount Rose near Lake Tahoe. Those surveys eventually led to easing "water war" tensions among Nevada and California water agencies.

In 1929, the California Legislature designated the State Division of Water Resources (now DWR) as the coordinator of the cooperative program that still carries the same name.

The basics of hiking and skiing through the snow to take measurements have been supplemented with modern technology. Electronic readings are taken constantly throughout the winter from more than 100 platforms—so-called snow pillows—stationed strategically throughout the Sierra Nevada.

But Gehrke said the most significant innovation in recent years has been NASA's laser-equipped small plane, the Airborne Snow Observatory, which allows basin-wide measurements. "It's a huge advance," he said. "There's now a need for greater accuracy in light of extreme dryness and extreme wetness, and we're just beginning to understand how we can use data that didn't exist before."

Although forecasts call for the current El Niño condition in the Pacific to produce heavy precipitation in California, water managers are concerned that warm temperatures may again work against creation of a deep snowpack.

According to the Western Regional Climate Center, the average minimum temperature in the Sierra Nevada during the winter of 2014–15 was 32.1 degrees Fahrenheit, the first time this value was above freezing in 120 years of record-keeping.

That fact greatly explains why Gehrke and his team found no snow at the Phillips snow course 90 miles east of Sacramento when they arrived for the April 1, 2015 snow measurement. The average snow depth there since 1941 is more than five feet, but Governor Edmund G. Brown Jr. stood on bare ground that day as he delivered his proclamation mandating a 25-percent reduction in water use throughout the state. Photographs of the event went viral.

Once again this year, the media—along with water managers and many others—will be eager to know whether the snowpack, as measured with methods developed by Dr. Church on Mount Rose above Lake Tahoe long ago, will be robust enough to signal the beginning of the end of California's drought.

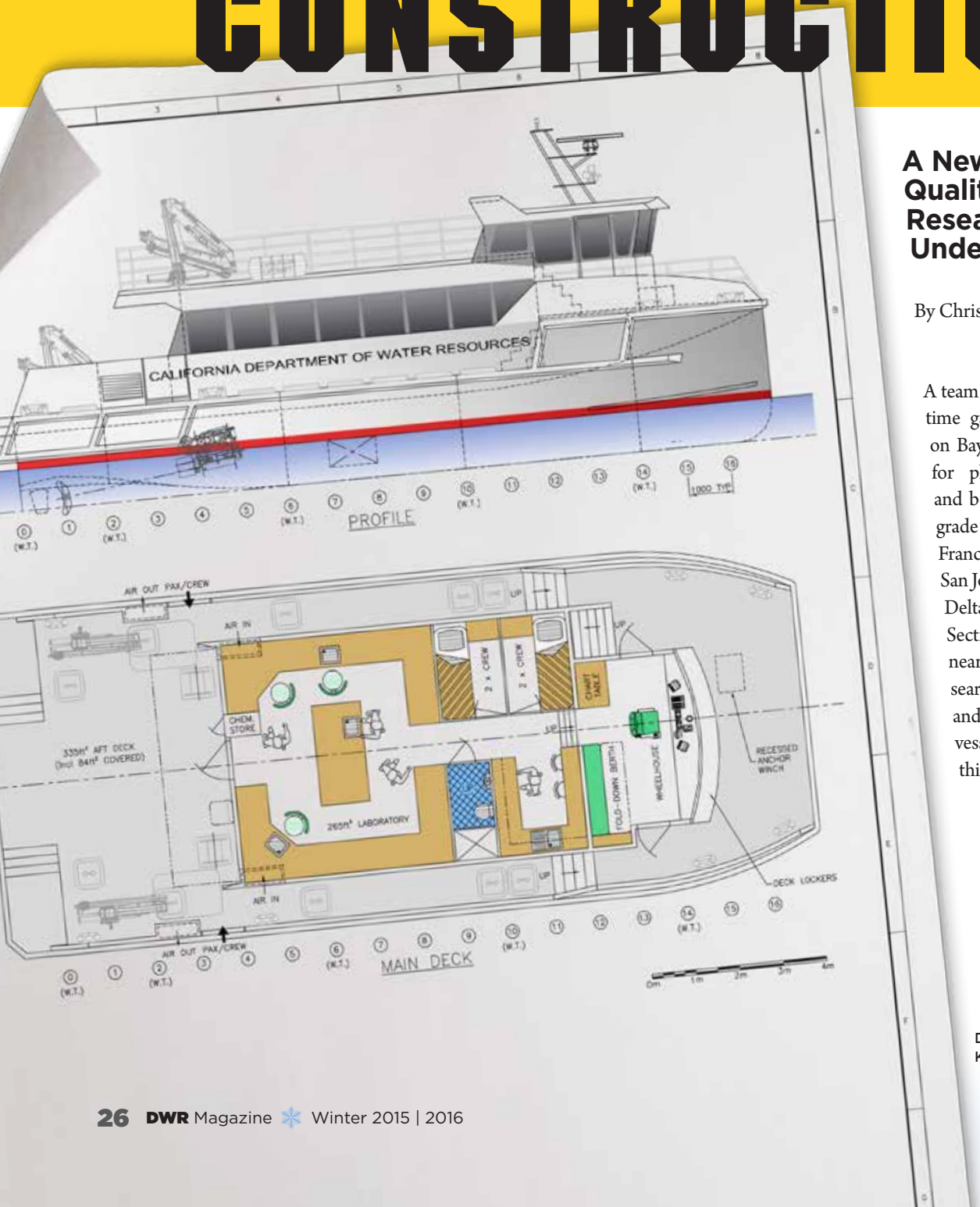
Right: Snow Surveyor Christopher Carr prepares to measure Sierra Nevada snow in 1967.
Below: Chief Snow Surveyor Frank Gehrke, Governor Brown and DWR Director Cowin stand in the dry snow course at Phillips Station on April 1, 2015. For the first time in 75 years of measuring this snow course, no snow was found during the early April measurements. Frank Anderson of U.S. Geological Survey and Frank Gehrke at December 2015 survey.

SENTINEL UNDER CONSTRUCTION

A New DWR Water Quality Monitoring Research Vessel Is Underway in Seattle

By Christina Jimenez

A team that spends a majority of its time gathering water quality data on Bay-Delta waters and sampling for phytoplankton, zooplankton and benthos will soon get an upgrade in how it navigates the San Francisco Bay and Sacramento-San Joaquin Delta. The DWR Bay-Delta Monitoring and Analysis Section will say goodbye to their nearly 40-year-old original research vessel, the San Carlos, and begin using a more efficient vessel named *Sentinel* starting this summer.



Design Drawing by Kvichak Marine Inc.

Construction of the new, custom-built 60-foot boat has begun in Seattle, Washington and is expected to be completed in July. Aluminum plates have been cut and welded into the structure.

"The San Carlos is outdated, requires a lot of maintenance, and is made up of a fiberglass shell," said Environmental Program Manager Karen Gehrts, Chief of the Division of Environmental Services Environmental Water Quality and Estuarine Studies (EWQES) Branch. "It has gotten to the point where maintenance costs and upkeep of the boat are comparable to the long-term investment of a new vessel."

"It makes more sense to invest in a new vessel that will be more efficient and have improved technological capabilities to keep up with our increasing monitoring demands," said Gehrts.

The EWQES Branch, which ensures DWR compliance with state water monitoring mandates, has seen a rise in special study requests, including numerous studies focusing on the drought's effect on water quality.

"We are excited to be part of the design and building process for the new research vessel," said Water Resource Engineer Associate Scott Waller, who gathers the water quality data on board the San Carlos. "The new vessel will continue to provide a platform that both encourages and supports the next generation of scientific leaders and serves the science and engineering research communities for decades to come."

New Features

The new $3.5 million vessel will cruise at a faster speed, have more lab and back deck space for sampling and a smaller four-foot draft (the distance from the surface water to the lowest part of the boat, such as the propeller or rudder) allowing the boat to enter shallower waters for restoration studies.

"There will also be more instruments—such as GPS, communications, everything in the pilot house in the new vessel," said Eric Santos, Chief Engineer of the San Carlos. "Everything we have now is very old. There is always an issue with the San Carlos when we take it out. We are all looking forward to trouble-free surveying."

A high-technology flow through system will also sample the water as the boat is in motion with the use of probes.

"By allowing us to gather data faster and the ability to move to different locations in the water quicker, the new vessel will improve the team's productivity on board, allow us to keep up with meeting our mandated monitoring commitments in a timely fashion, and meet the high-demand of requests for information," said Gehrts.

The Bay-Delta Monitoring and Analysis team currently runs into issues when studies require larger sampling. To have enough lab and deck space for more than 225 benthic samples from 180 stations, the team also uses the Bureau of Reclamation's research vessel to gather the samples.

Used for Bay-Delta monthly mandated scientific research and water quality monitoring, the San Carlos Research Vessel was custom-built for DWR in 1976 by the Campbell Yacht Company in San Diego.

"Our use of a research vessel is an integral part of DWR's Environmental Monitoring Program, dating back to 1976 when we starting using the San Carlos," said Senior Environmental Scientist Shaun Philippart, Chief of the Bay-Delta Monitoring and Analysis Section. "Our new vessel will be constructed of the newest safety materials and the latest navigational equipment to help ensure we conduct mandated and special studies monitoring in the safest and most effective manner."

Top: DWR Chief Engineer of Fish Vessel Eric Santos, who has navigated DWR's original San Carlos for 23 years, stands at the port bow of the new vessel. **Middle:** The high grade aluminum starboard and stern of the San Carlos measures 60 feet by 24 feet. **Bottom:** Starboard hull shows location where main engine, generator and fuel tank will be located.

Photos by Karen Gehrts, DWR

Career Paths

DWR Promotes Jobs at Career Exploration Fair

By Matt Harris

Above to Below (Left to Right) DWR employees at the event included Succession Planning Manager Norma Alvarado, Deputy Director Kathie Kishaba, Chief of Human Resources Kathy Aldana and Recruitment Coordinator Matt Harris.

What do 7,000 students, an Olympic gold medalist and a giant cheeseburger have in common? They were all at CareerGPS 2015! This annual event gathers middle and high school students from throughout Northern California to learn about the multitude of career paths available to them.

DWR staff attended CareerGPS to encourage the students' interest in engineering and environmental science. Classifications in these categories can be difficult to recruit for and with almost half of the state's workforce eligible to retire within the next five years, we need to start our recruitment efforts early!

DWR's booth included a trivia wheel with prizes and a giant cheeseburger display that demonstrated how much water goes into making each of the cheeseburger's ingredients. Students were eager to participate and learn about what DWR does and how they might fit into DWR someday.

"CareerGPS was a well-organized event and provided students a valuable opportunity to look at numerous different professions in one location," said Iggy Lopez, Chief of Operations and Maintenance's Outage Management Branch. "I enjoyed interacting with the students as they learned about the many topics involving water."

Dozens of schools participated in the two-day event, including Sacramento City Unified School District's School of Engineering and Sciences, which prepares high school students for advanced study in technical disciplines. Students visited DWR's booth and asked thoughtful questions about career development opportunities and college preparation, themes echoed by students from all schools and backgrounds.

The first day of CareerGPS featured a presentation by Dain Blanton, a gold medalist in beach volleyball at the 2000 Olympic Games. In recalling his career, Dain noted that he'd won a mere four percent of the tournaments he played in—but those wins wouldn't have been possible without all of the losses! He encouraged the students to persevere through the challenges they'll face and to take control of their own futures.

"Dain's presentation clearly resonated with the entire audience," said Kathie Kishaba, Deputy Director of Business Operations. "His message was vitally important for the students to hear as they embark on their journey to a fulfilling career."

Offering their expertise at CareerGPS, DWR employees from several divisions included Ricky Doung of Flood Management, Robert Curry of Engineering and Desmond Feher, Raman Isaiah, Iggy Lopez, Armando Ortiz, Joshua Pineda and Joe Reilly of Operations and Maintenance.

Kathy Aldana, the Chief of the Human Resources Office, would like to thank each of the volunteers for "helping to chart the path to the future for the hundreds of young people who stopped by the DWR booth."

"The wealth of knowledge and excitement our volunteers shared with attendees will undoubtedly lead some of those students to choose DWR as their future employer," said Norma Alvarado, DWR Succession Planning and Recruitment Manager.

As DWR continues its recruitment efforts, we'll need more volunteers to speak to career fair attendees. If you'd like to be involved, please contact DWR's recruiter, Matt Harris, at **matthew.harris@water.ca.gov**

A Magical Transformation

Fiscal Services Office Space Renovated

People usually don't have fun unpacking boxes unless they're opening gifts. For DWR's Division of Fiscal Services, emptying boxes to settle into their new vibrantly painted, carpeted and modernized home made it a rewarding event.

What became a five-month project ended with the transformation of a mazed sitting arrangement of 15,000 square feet of space on the eighth floor of the Natural Resources Building in Sacramento.

"This project shows how ingenuity (obtaining lightly used furniture) and teamwork of four divisions can result in a hugely successful outcome," said Kathie Kishaba, Deputy Director of Business Operations. "Not only did the project improve energy efficiency, safety, functionality of the space and the aesthetics, it also boosted staff morale . . . and that's priceless!"

From large old metal desks, free standing partitions and no carpeting in the 1980s to becoming one of the first DWR divisions to remodel to modular furniture in the 1990s, Fiscal Services was now ready for their next renovation after 25 years.

As soon as the office space was completely empty, DWR's Facilities team of 15 took care of having the office area painted and carpeted, newer modular furniture installed and air conditioning and heating system reconditioned. They teamed with the Divisions of Engineering's Architecture Office and Technology Services and Department of General Services.

Perla Netto-Brown, Chief of Fiscal Services, helps Duard MacFarland, Staff Services Manager III, unpack his boxes in his new office space on November 23, 2015.

Business Service Officer Simon Pickett Jr. (left) and Business Service Assistant Joe Armas, with DWR's Facilities and Property Branch in the Business Services Office, help with moving Fiscal Services' equipment back to the eighth floor of the Natural Resources Building.

Kudos to the Facilities staff," said Perla Netto-Brown, Chief of the Division of Fiscal Services. "We worked very well together. Everything was very well organized. They kept me in the loop from the beginning of drawing up the plans to when we had to move to the swing space and move back."

To improve efficiency of the area, the 73 new modular cubicles and 12 offices for staff are lighted by energy-efficient light bulbs and surrounded by new ADA compliant door openers and additional exit signs and fire extinguishers. Electrical wires previously on ground units were installed in the cubicle walls to allow for cleaner cubicle spaces.

"It's going to be great for employee morale and for recruiting new staff, too," said Netto-Brown, who is happy she could help make this move possible before her upcoming retirement this year. "Whenever you have a nice working atmosphere that is more efficient, your employees appreciate that. It is their second home. They spend a good part of their day here."

According to the frugal Netto-Brown, the better part of the move was that all of this came with a savings.

"Fiscal Services saved a lot of money when DWR received 320 cubes worth of "lightly used" modular furniture for only $66,000 from the Department of Social Services from a building in Fresno," said Brent Dills, Chief of the Facilities Office.

"The cost includes breaking it down and transporting it back to Sacramento. The modular system furniture used for the Fiscal Project itself was then 'free.'"

To move employees back to office spaces on November 23, the Facilities team dedicated the previous weekend to make it happen.

"On Monday morning, Fiscal employees showed up at Resources with everything ready to go," said Dills. "They leave one building on Friday and show up at another building on Monday with everything they need to go to work in place. We call that 'making the magic happen.' There is no magic, though. It's a lot of hard work and planning that makes it really happen."

Rick Smith, DWR Associate Business Management Analyst in the Business Services Office, applies base trim to the remodeled high density file storage system.

New Hires

Francisco Acosta
Southern Field Division
HEP* Electrician Apprentice

Matthew Allensworth
Delta Field Division
HEP* Operator Apprentice

Jenna Alves
San Luis Field Division
HEP* Electrician Apprentice

Brian Basura
Southern Field Division
HEP* Technician I

Jessica Belen
Human Resources Office
Training Officer I

Tyler Betteridge
Delta Field Division
HEP* Mechanic Apprentice

Vincent Billy
Southern Field Division
Materials and Stores Specialist

Heidi Branigan
Human Resources Office
Personnel Specialist

Michelle Budney
Human Resources Office
Personnel Specialist

Jessica Carter
San Joaquin Field Division
Utility Craftsworker Apprentice

Wilhelmina Chon
Executive
Office Technician (Typing)

William Conway
Business Services Office
Associate Business Management Analyst

Jesus De La Torre
Southern Field Division
HEP* Mechanic Apprentice

Jennifer Dean
Engineering
Engineering Geologist

Ekaterina Deaver
Office of the Chief Counsel
Attorney

Ryan Dong
Human Resources Office
Personnel Specialist

Devin Driggs
San Joaquin Field Division
Materials and Stores Specialist

Raul Espinoza
San Luis Field Division
Utility Craftsworker Apprentice

Floyd Fowler
Engineering
Staff Services Analyst

Craig Gildart
Engineering
Electrical Construction Supervisor I

Lorenzo Granillo
Business Services Office
Warehouse Worker

Irina Gulchenko
Human Resources Office
Personnel Specialist

* Hydroelectric Plant

Meet the New Deputy Director

Taryn Ravazzini, DWR's new Deputy Director for special initiatives, came to the Department in December from the Delta Stewardship Council, where she was coordinator of the Delta Plan Interagency Implementation Committee.

Water has been the constant focus of Taryn (sounds like tar-in) Taryn's career. The San Rafael native was on the staff of California Senator Barbara Boxer in Washington, D.C. when she was recruited by the Association of California Water Agencies (ACWA) in 1999 to be ACWA's federal relations representative in Washington. Two years later, she moved to Sacramento to manage five of ACWA's 10 regional boards.

Taryn's experience with ACWA and the Delta Stewardship Council gives her hope that the Delta's water issues, though enormously complex, don't have to devolve into modern water wars.

"A panel of scientists recently described problems in the Delta as 'wicked,'" she said, "meaning they're so serious they can't be ignored but have no straightforward solution. I like to think hard work and cooperation will lead us to improve conditions and find solutions where we can."

Taryn said implementation of the Water Action Plan will be her principal special initiative at DWR. Time spent with Director Mark Cowin and his executive team will inform the focus of her new duties.

Though she's been dealing with water issues for years, the grueling experience of waiting for her State Bar exam results after earning a Juris Doctor degree from the Golden Gate University School of Law convinced her it was time to make her wine appreciation hobby also her profession—at least for a while.

"I joke that it was a biblical excursion, because my career turned from water to wine and back to water again," she laughed. Taryn became the senior wine educator at Napa Valley's Domaine Carneros Winery in 2009 and later guest relations coordinator at Opus One Winery. She calls the wine industry "my favorite kind of agriculture."

Cycling is another Taryn hobby, and she combined it with wine appreciation while cycling through France's Burgundy region. "It was a fabulous eight-day trip," she recalled, "but I was a little too ambitious in my wine purchases. The bike's load was so heavy I had to lighten it in the most appropriate and enjoyable manner possible."

Water's hold on Taryn brought her to the Stewardship Council two years ago, and she hasn't done much biking since. But she said she intends to dust off her bike's cobwebs and take it out to the American River Parkway for some professional recreation.

"I could call it 'drought monitoring'," said Taryn.

DWR Management Development Program Graduates of 2015

By Sean Walsh

DWR's Management Development Program completed its year-long journey at the November 3, 2015 Governance Board meeting.

DWR mid-level managers are nominated by their direct supervisors to participate in this program, where they learn more about DWR and develop the tools to become more effective leaders. Participants are teamed together to develop and complete a project which could be implemented by the Department. The program culminates with a 15 minute presentation of their projects to the Governance Board.

The five 2015 DWR Management Development Program (MDP) project teams gave their presentations to the board and guests. The audience for this meeting included Deputy Director Kathie Kishaba with 11 Division and Office Chiefs, including Kathy Aldana, Cathy Crothers, Dave Duval, Tim Garza, Kamyar Guivetchi, David Gutierrez, Arthur Hinojosa, Jeffrey Ingles, Dave Kearney, Dean Messer and Stephanie Varrelman. Other participants included Anecita Agustinez, Priscilla Neal, Sheree Edwards and Jamie Cole. Kamyar Guivetchi, Chief of the Statewide Integrated Water Management and Dean Messer, Chief of the Division of Environmental Services, served as the Program Co-Mentors.

After the presentations were complete, the Governance Board members shared their thoughts and support of the participants, their projects and the program in general.

Since the program began in 1995, more than 575 DWR mid-managers have completed the program. The 2015 MDP added 28 graduates to that distinguished list.

Left to Right (Back Row) Dave Kearney, Kevin Clark, Mike Wright, William Voss, John Keller, Erik Malvick, James Newcomb, Joseph Bartlett, Seth Lawrence, Steven Speck, Andrew Pendery. **(Middle Row)** Kamyar Guivetchi, Art Hinojosa, David Pesavento, Martin Stevenson, Mahmoud Mabrouk, Tom Cobarrubia, Kathy Aldana, Jose Beitia, Anna Fong, Ron Unger, Richard Chen, Joseph Chang, Leroy Ellinghouse, Ravi Sharma, Tim Wehling, Hoa Xie, Cathy Crothers, Dean Messer, Kathie Kishaba. **(Front Row)** Rachel Corbett, Hong Lin, Amber Candela-Cooney, Heidi Hall, Louise Conrad.

New Hires

Jason Hall
San Luis Field Division
HEP* Operator Apprentice

Sherif Hanna
Delta Field Division
Junior Engineering Technician

MD Hasan
State Water Project Power & Risk Office
Electrical Engineer

Tyler Hatch
Flood Management
Engineer

Annett Hoak
Human Resources Office
Personnel Specialist

Kevin Huang
Engineering
Engineer

Patrick Jarrett
Northern Region Office
Environmental Scientist

Bradley Johnson
Engineering
Right of Way Agent

Shafiq Khan
Fiscal Services
Accounting Officer

Michael Kurtenbach
Operations and Maintenance
Staff Services Analyst

Stephen Layton
FESSRO***
Senior Environmental Scientist

Albert Lu
Southern Region Office
Environmental Scientist

Evan Mackinnon
Northern Region Office
Environmental Scientist

Gregory Mar
Executive
Staff Services Analyst

Kimberly Matthews
Engineering
Associate Governmental Program Analyst

Rosalie Moede
Southern Field Division
Office Technician (Typing)

Art Munar
Human Resources Office
Personnel Specialist

Patrick Nolan
Engineering
Right of Way Agent

Nicholas Novoa
Engineering
Engineering Geologist

Oscar Pulido
San Joaquin Field Division
HEP* Electrician Apprentice

Dennis Rigali
San Joaquin Field Division
HEP* Operator Apprentice

Regina Roberts
San Joaquin Field Division
Management Services Technician

* Hydroelectric Plant
*** Floodsafe Environmental Stewardship and Statewide Resources Office

New Hires

Trent Schaffer
Delta Field Division
Utility Craftsworker

Erika Schomberg
Delta Field Division
Utility Craftsworker Apprentice

Kathryn Schulz
Public Affairs Office
Associate Governmental Program Analyst

Kevin See
Technology Services
Data Processing Manager III

Cheryl Selby
Business Services Office
Staff Services Analyst

Robert Short
North Central Region Office
Environmental Scientist

Holly Stout
Office of the Chief Counsel
Attorney IV

Rajmani Subedi
Flood Management
Engineer

Krystle Thompson
Oroville Field Division
Environmental Scientist

Tina Tran
Human Resources Office
Personnel Specialist

Ruth Watson
Human Resources Office
Staff Services Analyst

Heather White
Flood Management
Environmental Scientist

Wilson Wong
Operations and Maintenance
Systems Software Specialist III

Michael Zelazo
Flood Management
Engineer

Promotions

Qays Ahmed
Technology Services
Associate Information Systems Analyst

John Ahrens
Delta Field Division
HEP* Technician II

Gregory Aleksich
Engineering
Associate Cost Estimator

Katherine Bandy
Environmental Services
Senior Environmental Scientist

Veronica Banuelos
Safety of Dams
Administrative Officer II

Denise Barnes
Southern Field Division
Administrative Officer II

Kyle Bickler
Flood Management
Senior Engineer

*Hydroelectric Plant

Technology Award

Division of Technology Services Awarded at California Technology Forum

By Akiela Moses

DWR's Division of Technology Services managers Eleazar (Leo) Anguiano, Victor Jimenez and Steve Peterson received the 'Best of California' award for their dedication in developing, maintaining and improving software systems during the annual 2015 California Technology Forum on August 13th in Sacramento.

Twenty-seven recipients were awarded at the event created to bring together leaders throughout California within state and local agencies that specialize in technology support and engineering.

"We must continue to be diligent and always find new ways to make things better," said Leo Anguiano, Chief of Enterprise Geographic Information Systems Services Office for the Division of Technology Services. "Technology is changing so fast that today's problems have been solved by tomorrow's technology." Leo received the award for his leadership and effort in making geographical data more productive for various organizations, including DWR.

The Forum provided an opportunity for all attendees to network with other leaders within the field, listen to keynote speakers, as well as receive information and discuss important topics regarding current and future technologies. A few discussion topics included Cloud services and cyber security.

Victor Jimenez, Chief of Collaboration Services for the Division of Technology Services earned his award for his competency and support in developing web technologies. Steve Peterson received the award for his leadership in operating engineering technology and coaching other members of the technology team as the Manager of Engineering Technology Services.

"From day one at DWR, I've always wanted to assist the employees of DWR to make their jobs easier with existing and future technologies," said Victor Jimenez. "To be able to contribute something so important to DWR with collaboration regarding sharing key content from enterprise to organization is something my staff and I take great pride in."

(Left to Right) California Technology Forum's awards recipients from DWR include Steve Peterson, Victor Jimenez and Leo Anguiano.

CELEBRATING

25 Years of Service

Russell Allenbaugh
Operations and Maintenance
Senior Control Engineer
February 2016

Joseph R. Barron II
Engineering
Supervising Engineer
January 2016

Ron Bennett
Operations and Maintenance
Senior Hydroelectric Power Utility Engineer
November 2016

Darren Choyce
San Joaquin Field Division
Hydroelectric Plant Operations Superintendent
January 2016

Monica Dahlberg
Technology Services
Staff Information Systems Analyst
January 2015

Eric Davis
Southern Field Division
Senior Hydroelectric Plant Operator
January 2016

Marina Guerra
Technology Services
Staff Information Systems Analyst
January 2016

Joel Ledesma
Operations and Maintenance
Principal Hydroelectric Power Utility Engineer
December 2015

Jerry Lerno
Delta Field Division
Water Operations Technician II
December 2015

Tina Schaffer
Human Resources Office
Staff Services Manager I
February 2016

Twylla Winslow
Fiscal Services
Staff Services Manager II
December 2015

Promotions

Samantha Blackwood
Human Resources Office
Staff Services Manager I

Jason Bunce
San Joaquin Field Division
HEP* Mechanical Supervisor

Melanie Calaustro
Operations and Maintenance
Staff Services Analyst

Jason Calderon
San Luis Field Division
HEP* Operator

Amber Candela-Cooney
Delta Field Division
Utility Craftsworker Supt.

Ryan Cooper
Operations and Maintenance
Senior Engineer

Dustin Deeks-Lederer
Operations and Maintenance
Associate Control Engineer

Steve Doe
South Central Region Office
Senior Engineer

Kenneth Dunn
Oroville Field Division
HEP* Electrical Supervisor

Edward Elliott
Oroville Field Division
Utility Craftsworker Supt.

Sergio Escobar
Executive
Principal Engineer

Efren Flores
Delta Field Division
HEP* Technician II

Shawn Freitag
Flood Management
Utility Craftsworker Supv.

Joaquin Garza
North Central Region Office
Water Resources Technician II

Jeanette Hamilton
Human Resources Office
Associate Personnel Analyst

Emmalynn Harvey
Fiscal Services
Accounting Administrator I

Doris Hegner
Bay-Delta Office
Administrative Officer II

Octavio Herrera
Delta Field Division
HEP* Operations Supt.

Curtis Johnston
San Joaquin Field Division
Utility Craftsworker Supv.

Gardner Jones
Executive
Program Manager I

Krista Kell
Engineering
Associate Governmental Program Analyst

Ashraf Keval
Technology Services
Systems Software Specialist III (Supv.)

* Hydroelectric Plant

Promotions

Rhiannon Klingonsmith
Environmental Services
Senior Environmental Scientist (Supv.)

Mason Leach
Delta Field Division
Chief HEP* Operator

Elizabeth Martinez
Southern Field Division
Water Resources Technician II

Dane Mathis
South Central Region Office
Supervising Engineering Geologist

Judith McCarty
Human Resources Office
Personnel Specialist

C. Michael McKenzie
South Central Region Office
Senior Engineering Geologist

Noralee McKnight
Human Resources Office
Personnel Supervisor I

Margaret Monreal
South Central Region Office
Administrative Officer II

Michael Morris
South Central Region Office
Staff Information Systems Analyst

Julianne Munoz
Technology Services
Associate Information Systems Analyst

Wilma Ordiz
Operations and Maintenance
Associate Telecommunications Engineer

Casey Osborne
Delta Field Division
HEP* Maintenance Supt.

Steven Pansoy
Technology Services
Staff Programmer Analyst

Nickolas Perez
Technology Services
Systems Software Specialist III

Araya Rabidoux
Engineering
Associate Governmental Program Analyst

Kayalvizhi Raju
Southern Field Division
Water Resources Technician II

Jasmine Ray
Engineering
Staff Services Analyst

Michael Roberts
FESSRO***
Program Manager

John Ross
Flood Management
Utility Craftsworker

Raul Salcedo
Delta Field Division
Water Resources Technician II

Emma Siegfried
Environmental Services
Environmental Scientist

Samantha Sierra
San Joaquin Field Division
Administrative Officer I

* Hydroelectric Plant
*** Floodsafe Environmental Stewardship and Statewide Resources Office

Celebrating Graduations for DWR Apprentice Graduates

In 2015 and 2016, 11 DWR Apprentices graduated from the Operation and Maintenance's Apprentice Program. Since the program was created more than four decades ago, 395 hydroelectric plant and 108 utility craftsworker apprentices have graduated. To learn about DWR's Apprentice Program, visit **water.ca.gov/apprenticetraining/**

Valentin Vela
San Joaquin Field Division
Hydroelectric Plant Electrician
March 2015

Jacob Beauchamp
Oroville Field Division
Hydroelectric Plant Mechanic
May 2015

Joseph Bridgford
San Luis Field Division
Hydroelectric Plant Electrician
July 2015

Jason Calderon
San Luis Field
Hydroelectric Plant Operator
August 2015

John Ross
Sacramento Maintenance Yard
Utility Craftsworker
August 2015

Shannon Becker
Oroville Field Division
Hydroelectric Plant Operator
January 2016

Steven Popish
Delta Field Division
Hydroelectric Plant Mechanic
January 2016

Chad Pfeiffer
San Joaquin Field Division
Hydroelectric Plant Mechanic
January 2016

Isaias Rodriguez, Jr.
Southern Field Division
Hydroelectric Plant Electrician
January 2016

Edgar Padilla
San Joaquin Field Division
Hydroelectric Plant Operator
February 2016

Garrett Townsend
Sutter Maintenance Yard
Utility Craftsworker
February 2016

Retirements

Doug Thompson

Ensuring that State Water Project deliveries took place on schedule became a big part of Doug Thompson's 27 years with DWR. Doug, who retired in December as Hydroelectric Plant Operations Superintendent of Delta Field Division, knew his job wasn't easy.

"I enjoyed the many types of duties involved in operations," said Doug. "The challenges have been constantly changing, with safety and environmental regulations that seem to change faster than they can be published and trained."

As part of the State Water Project (SWP) field division where the California Aqueduct begins, Doug led a team of operators at Delta's five pumping plants in pumping water out of the Delta to make deliveries to SWP's South Bay water contractors in the Alameda and Santa Clara counties, North Bay water contractors in Napa and Solano counties and other contractors as far south as San Diego.

While maintaining the safety and operations of the plants and equipment, Doug aimed to keep repair work on schedule. When not overseeing repairs, Doug enjoyed supervising new projects, such as the South Bay Enlargement and Improvement and the Delta/Mendota California Aqueduct Intertie.

Although a major part of Doug's DWR career was at Delta Field Division, he has worked at several SWP facilities. He joined DWR in 1988 as a Civil Maintenance Journey Worker at Southern Field Division after working two years as a hydraulic rock drilling operator on the construction of New Spicer Reservoir in Arnold. By 1990, he was working for the Sacramento Flood Maintenance Yard, and started his career at Delta Field Division in 1991 as a Water Resources Technician. In 2009, he became Operations Superintendent.

"Operations offers endless opportunities for continued learning and advancement," said Doug. "During my Firebaugh floodfighting assignment, the best part was the training and experience that I received in an actual Incident Command System event. I learned how everyone works together to accomplish one goal and how duties can change suddenly in response to constantly changing circumstances or events. It seems that the more you learn, the more you realize how much more there is to learn."

Doug, a well-known water operations expert, took learning a step further by sharing his State Water Project operations knowledge with Huell Howser for Huell's California's Gold television series and the History Channel for the "Crumbling of America" program.

As Doug wraps up his career with DWR, he looks forward to traveling to new areas, becoming more engaged with his community and catching up on sleep.

Promotions

William Smith
San Joaquin Field Division
Senior HEP* Operator

Ted Soderstrom
Oroville Field Division
Senior HEP**Utility Engineer (Supv.)

William Soszka
Operations and Maintenance
Systems Software Specialist I

Michael St. Jacques
Engineering
Engineer

Mary Tipton
Engineering
Mechanical Engineering Technician II

Alice Tung
North Central Region Office
Environmental Scientist

Pieter Van Tatenhove
Business Services Office
Associate Governmental Program Analyst

Robert Whaley
Operations and Maintenance
Senior Water and Power Dispatcher

Nicole Wietsma
Operations and Maintenance
Staff Services Analyst

Clinton Womack
Oroville Field Division
Water Resources Technician II

Geoff Womack
Delta Field Division
HEP* Technician II

Michelle Wong-Chiu
Fiscal Services
Accounting Officer

Wendy Wood
San Luis Field Division
Water Services Supervisor

Shaw Yalda
State Water Project Analysis Office
Associate HEP** Utility Engineer

Wendy Yang
Human Resources Office
Personnel Supervisor I

Rodney "Scott" Zimmerman
Oroville Field Division
HEP* Technician Supv.

Retirements

Ben Arikawa
California Energy Resources Scheduling
Senior HEP* *Utility Engineer

Noemi Baca
South Central Region Office
Staff Services Analyst

Dennis Borrelli
Delta Field Division
Water Resources Technician II

Charlotte Coron
Bay-Delta Office
Administrative Officer II

Rhett Cotter
Delta Field Division
Utility Craftsworker Supt.

* Hydroelectric Plant

Retirements

Tommy Deaton
Operations and Maintenance
Senior Water and Power Dispatcher

Deanna Denton
Safety of Dams
Associate Governmental Program Analyst

Brian Depuy
Engineering
Construction Supervisor III

Michael Ford
Delta Field Division
Utility Craftsworker

Robert George
Oroville Field Division
HEP* Technician Supv.

Deborah Guerrero
Human Resources Office
Personnel Specialist

Johnie Hill
South Central Region Office
Staff Services Analyst

Mark Hopper
San Joaquin Field Division
Senior HEP* Operatr

Bruce Jackson
Southern Field Division
HEP* Maintenance Supt.

Jeffrey Janik
Operations and Maintenance
Program Manager I

Eric Kassahn
Delta Field Division
HEP* Operator

Douglas MacMullen
State Water Project Power & Risk Office
Senior HEP** Utility Engineer (Supv.)

Jerry Marcott
Business Services Office
Office Assistant

Leonard Marino
Central Valley Flood Protection Board
Principal Engineer

Lorraine Marsh
Statewide Integrated Water Management
Research Program Specialist II (Economics)

John Moe
Oroville Field Division
Utility Craftsworker Supt.

Demetrio Moreno
San Joaquin Field Division
Utility Craftsworker

James Newby
San Luis Field Division
Utility Craftsworker Supv.

Tony Pellegrini
Flood Management
Utility Craftsworker

Irma Peralez
Human Resources Office
Staff Services Manager I

Cynthia Perea
Delta Field Division
Utility Craftsworker Supv.

Kathy Roberson
Safety of Dams
Staff Services Analyst

Albert Romero
Engineering
Construction Supervisor II

*Hydroelectric Plant **Hydroelectric Power

Maria Gomez

After 31 years of working on DWR contracts and mitigating between legal counsels and the public, Staff Services Manager Maria Gomez in the Division of Business Services Contract Services Branch retired, with 41 years of state service.

"My greatest reward and passion is leaving a legacy in DWR with my participation in managing and protecting California's water and working with other local and federal agencies to benefit the state's people, to protect, restore and enhance the natural and human environments," said Maria.

Born and raised in Sacramento, Maria's passion to serve the people of California started with the California State Franchise Tax Board, followed by the California State Personnel Board before joining DWR.

She came on board with DWR as a Management Services Technician with the Division of Management Services' Mobile Equipment Office, where she worked on the Equipment Accounting System, purchasing and contracts.

"In my most recent position as Contract Services Branch quality control manager, I assisted the Office of Chief Counsel in reviewing in great detail a wide range of the Department's high-profile and complex agreements," said Maria, who joined the Contract Service Office in 1999.

She worked side-by-side with attorneys, managers and the public to administer the contract approval process. Contracts Maria worked on included the Army Corps of Engineers work on the Yolo County Bypass and levee improvements and State Water Project contracts.

"My proudest moments with DWR are the achievements of the 100-percent contract approval rates in which the Department of General Services acknowledges the DWR contracting unit as the 'Role Model Agency' for contract services," said Maria.

Maria has earned many DWR awards highlighting her contract efforts. In 2003, she received the Outstanding Professional Accomplishment Award and State Sustained Superior Accomplishment Award. She earned four unit citations, including two highlighting her contract efforts on levee and drought projects. In 2011, she earned a Celebrating Excellence Award. In addition, during the 1999 SAP implementation, Maria became the SAP subject matter expert.

As she enters retirement, the DWR veteran shifts her focus from contracts to volunteering her time to the Wounded Warrior Project and lobbying with Congress for better jobs, education, homes and medical treatment of combat veterans issues that are close to home for Maria. She has identical twin sons who have served in the United States Army—one a combat veteran and one on active duty. In addition to dedicating time to helping veterans, Maria also plans to travel with her grandchildren to Japan, Disneyland, Texas and Hawaii, cook, sew, redecorate her home and continue teaching Sunday school.

LIVE SAFE | WORK SAFE

DWR Safety System

Building a DWR Safety Culture

As we move into a new year, I want to provide an update on the progress we've made building our safety culture at DWR.

Just over two years ago, I announced in a department-wide video that we were implementing our new safety system, starting with a DWR Safety Office under the direction of Mike Donlon, Chief Safety Officer.

We've made great progress. Employees throughout our organization are more focused on safety and recognize it is everyone's responsibility to keep ourselves and our colleagues safe. Leadership and regulatory training, more effective communications, and safety branding are also contributing to a growing safety awareness.

At the core of our safety system is our goal of zero injuries and we must ensure all employees are fully engaged in this effort.

- Developing a safety culture and a world class safety system begins with a commitment from the top. More than 280 managers and supervisors have taken our executive leadership safety training. The managers felt employees should also learn about safety leadership. More than 1700 employees attended our "I am a Safety Leader" seminars.

- Safety Committees have been formed at the Department, Division, and Field level. While there were several safety committees around the Department, the new structure ties them all together so safety information can flow throughout the Department. If you have any safety concerns or want to learn more about the DWR Safety System, a safety committee member is a good place to start.

- A true safety culture involves constant awareness and safety reminders. We developed a DWR safety brand with a logo and tagline that reinforces our philosophy. This embodies the dual nature of DWR's Safety System: we want you and your coworkers to be safe not just at work, but also when you're away from the workplace.

- Effective communication of our safety goals, strategies, and lessons learned, etc., is an integral part of a strong safety culture. We've made good progress on this front as well. Examples include our quarterly messages and other communications that speak to safety issues. We have also installed safety bulletin boards to facilitate safety communications across our organization. An online Current website for cross-division collaboration on safety issues will also soon be available.

Building a world class safety system and a true safety culture is a continuous journey—something we all have to work at every day. We are committed to achieving that goal.

Best regards,

LIVE SAFE | WORK SAFE,
Mark W. Cowin
Director

In Memoriam

Retirements

Gregory Rowe
State Water Project Power & Risk Office
Senior HEP** Utility Engineer (Supv.)

Thomas Shannon
Oroville Field Division
HEP* Electrical Supv.

Sandra Springer
FESSRO***
Associate Governmental Program Analyst

Robert Stewart
San Joaquin Field Division
HEP* Electrician I

Allen Thompson
San Joaquin Field Division
Associate Safety Engineer

Perry Wallace
Operations and Maintenance
Heavy Equipment Mechanic

Robert Wirth
San Luis Field Division
HEP* Maintenance Supt.

Garland Young
Southern Field Division
Chief HEP* Operator

*Hydroelectric Plant
**Hydroelectric Power
*** Floodsafe Environmental Stewardship and Statewide Resources Office

Debra Carlisle

Debra Carlisle, a retired Senior Engineer of the Financial Assistance Branch Section with the Division of Integrated Regional Water Management (DIRWM), passed away November 16, 2015.

Debbie began her DWR career in 1980 as an Associate Engineer with the Division of Design and Construction (now called Engineering). She was promoted to Senior Engineer in 1988. She received a Meritorious Service Award for excellent work on the Devil Canyon Power Study Project, and a Certification of Appreciation for her outstanding contribution to the Coastal Branch Phase II Project. After transferring to the Division of Flood Management to lead a Levee Rehabilitation Team in 1997, Debbie received a Unit Citation for outstanding accomplishments.

In 2002, Debbie transferred to the Division of Planning and Local Assistance, Fish Passage Improvement Program, receiving two Unit

Citations for efforts to meet present and future ecosystem restoration and water supply needs. She served on the 2007 and 2008 State Emergency Assessment Teams preforming rapid assessments of post-fire impacts to lives, property and resources as part of a team of employees from various Natural Resources Agency departments. Debbie received a Unit Citation for 2007 Southern California Fire Recovery Responders.

From 2009 to 2011, as a Senior Engineer with the Financial Assistance Branch Section of DIRWM, Debbie managed the Proposition 1E Stormwater Flood Management Grants Round 1 solicitation.

Debbie had a passion for her two cats, Tuxedo and Max. Her love for the forest and nature led her to hiking different peaks in Tahoe each weekend and enjoying camping and hiking adventures during her vacations. Her hiking and camping stories inspired others to test their ability and try nature. Debbie dreams were to retire and work for the forest service, but became ill before retirement.

Those who worked with Debbie recalled that her laughter would lighten up serious work moments, smiling even when she did not feel well and being the nicest person that they had worked with.

After 31 years of service, Debbie retired from DWR in 2012.

Debbie is survived by her brother and sister-in-law, Fred and Janice Carlisle. At her request, no services were held.

Memoriams

Herbert Matsinger	Operations and Maintenance	October 21, 2015
James "Doug" VanGelder	Engineering	December 23, 2015
Ralph Finch	Bay-Delta Office	December 26, 2015
Mary Jo Schall	Human Resources Office	December 28, 2015

Digging In

You might call it Sandbag 101, but most consider it to be a valuable tool for flood fighting. Rick Burnett, DWR Flood Fight Specialist **(right)** and other DWR staff have trained more than 1500 people statewide on sandbagging and levee repair methods. Trainees, who are from public, state, federal or local agencies, learn how to fill, pass and place sandbags. Overfilling or improper stacking of sandbags may weaken flood control structure.

DWR Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people and to protect, restore and enhance the natural and human environments.

DWR's Safety of Dams Engineer Russell Bowlus inspects reinforcing steel for the 60-foot-wide concrete spillway at the Calaveras Dam replacement project in Alameda County. The new 250-foot-tall embankment dam is expected to be completed in 2018.